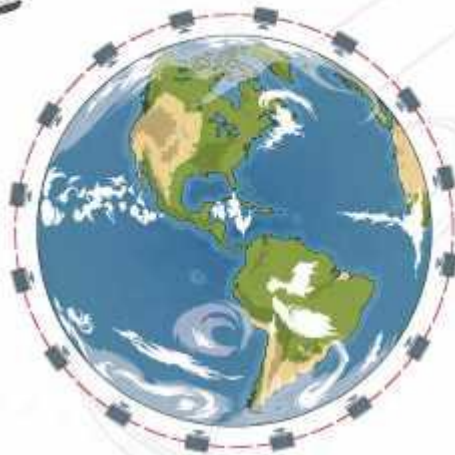


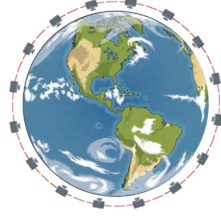
Strategic Searching Online



Strategic Searching Online



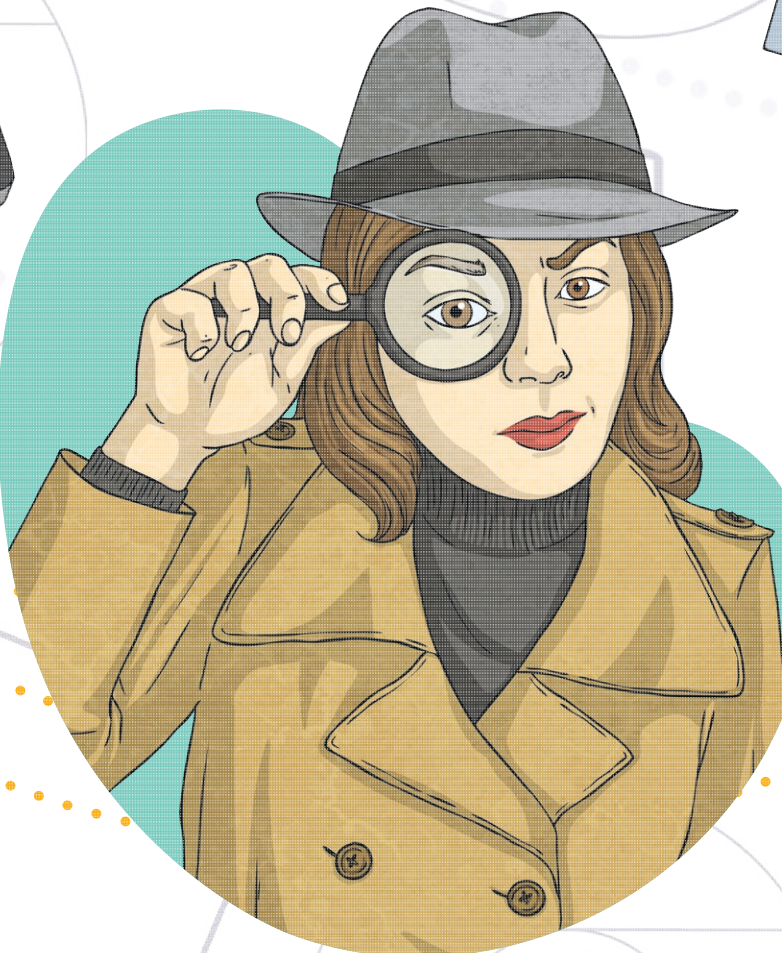
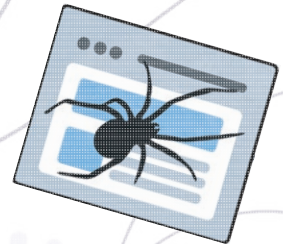
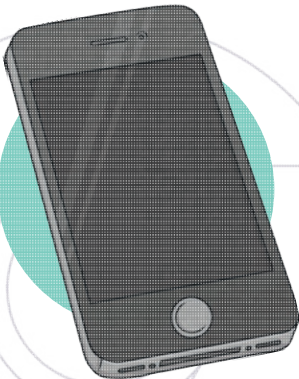
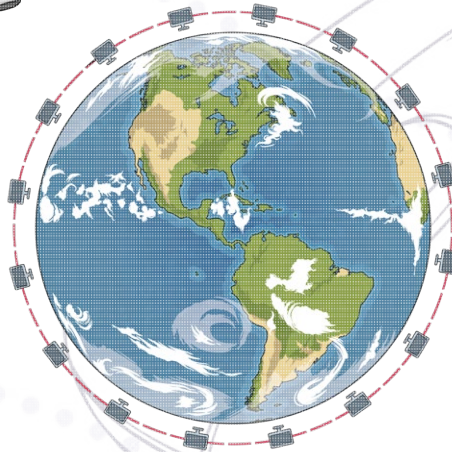
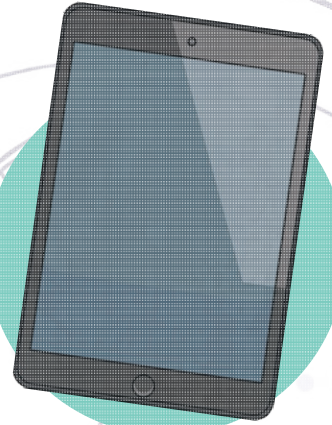
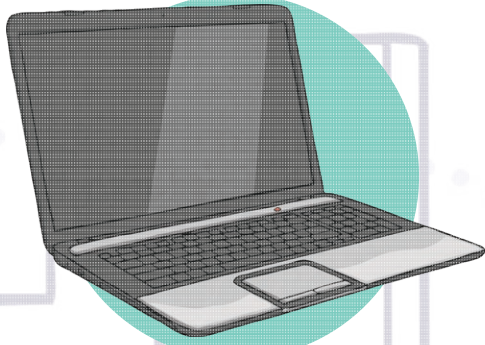
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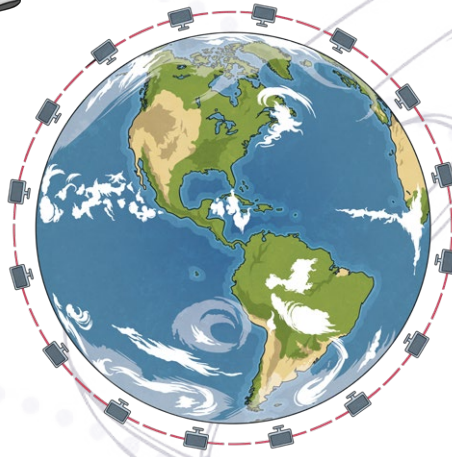
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Strategic Searching Online



Strategic Searching Online



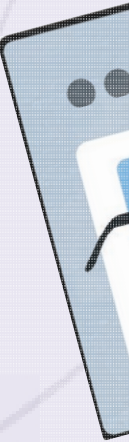


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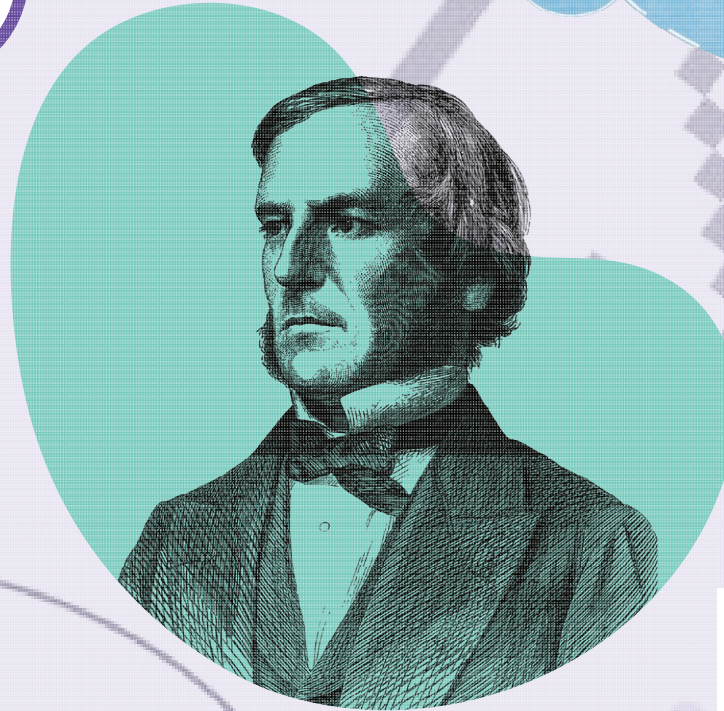
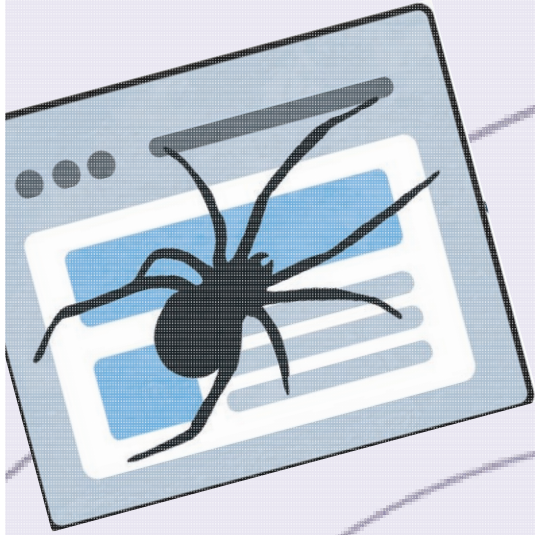


Strategic Search

Online



thing





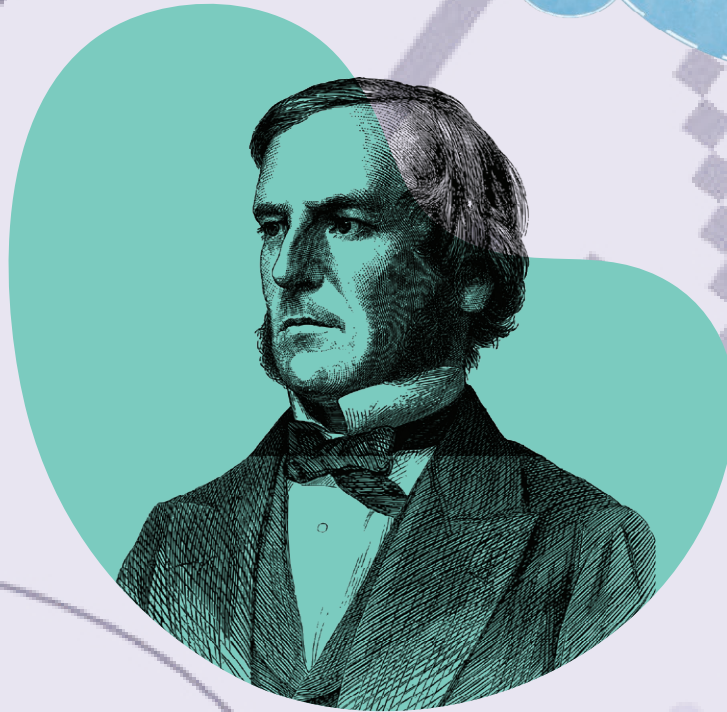
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Strategic Search Online



thing

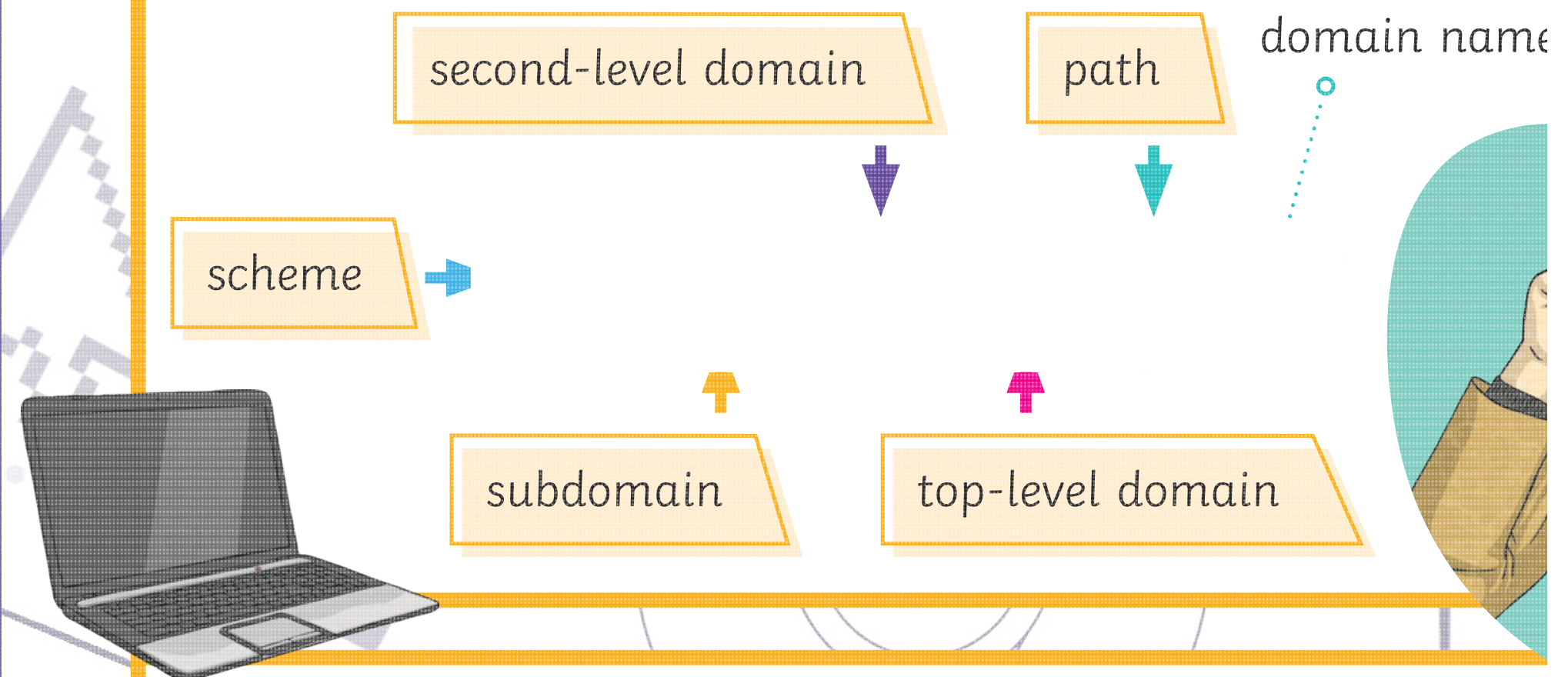


Strategic Search



A **search engine** is a service you use on the Internet. This requires a search term to be inputted.

URL Components



Key Vocabulary

Internet

search engine

web browser

website

web page

Boolean operator

web crawler

Uniform Resource Locator (URL)

Hypertext Transfer Protocol (HTTP)

protocol

search engine index

Searching Online

Internet to help you find information via the World Wide Web, such as a group of words or a question.

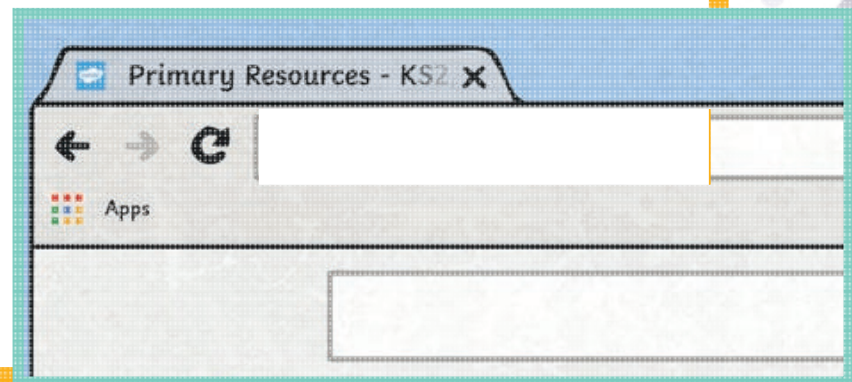


Websites and Web Pages

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- hyperlink
- search terms
- search engine results page (SERP)
- page rank
- search engine optimisation (SEO)

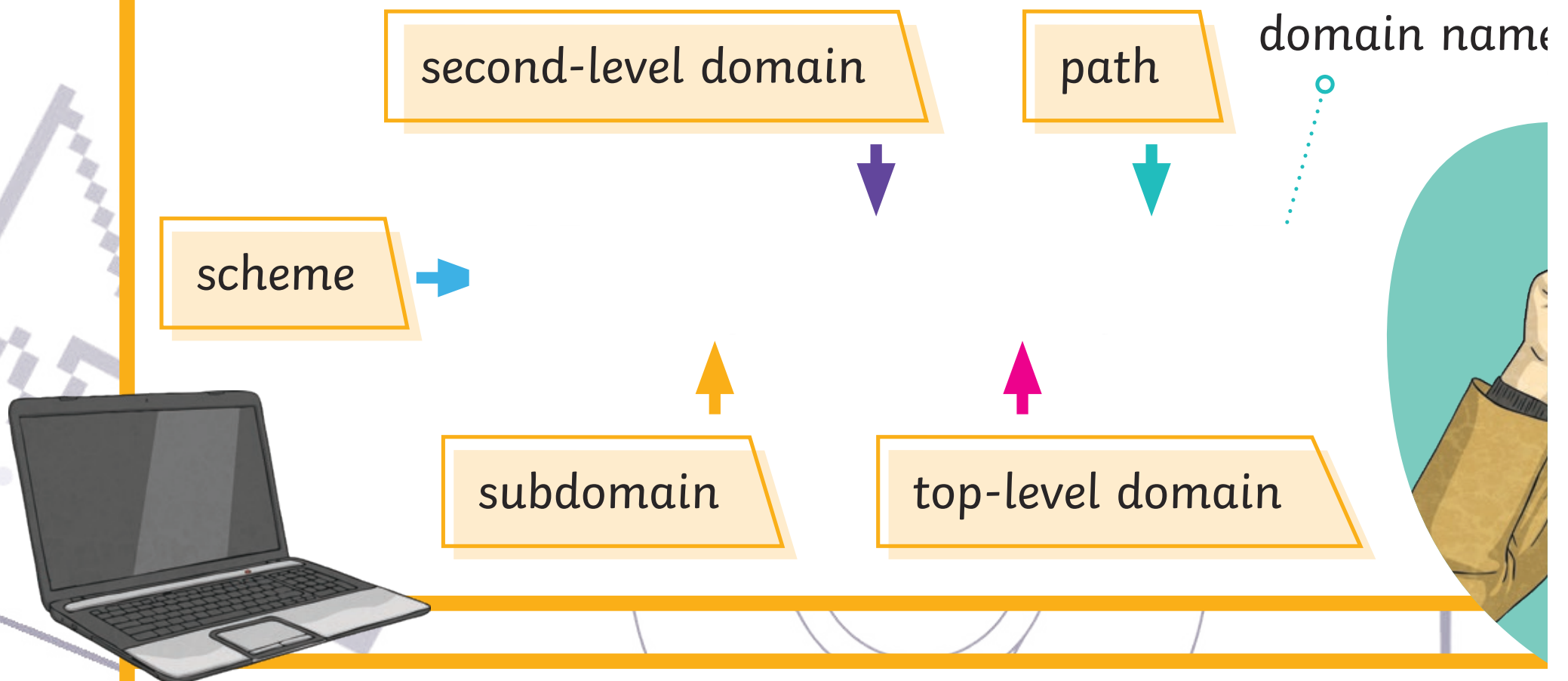


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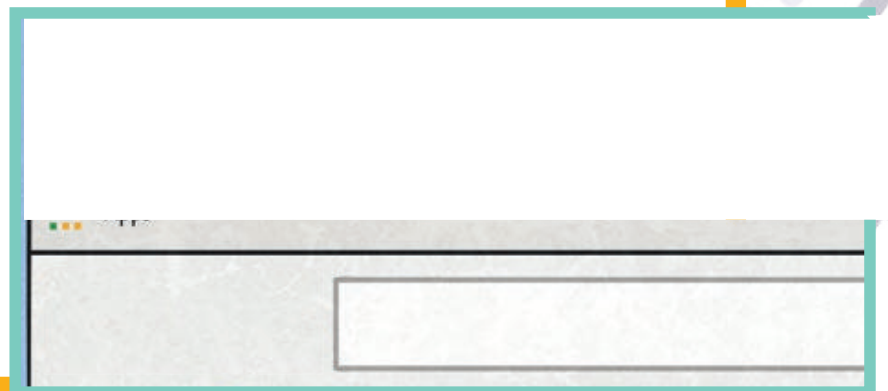


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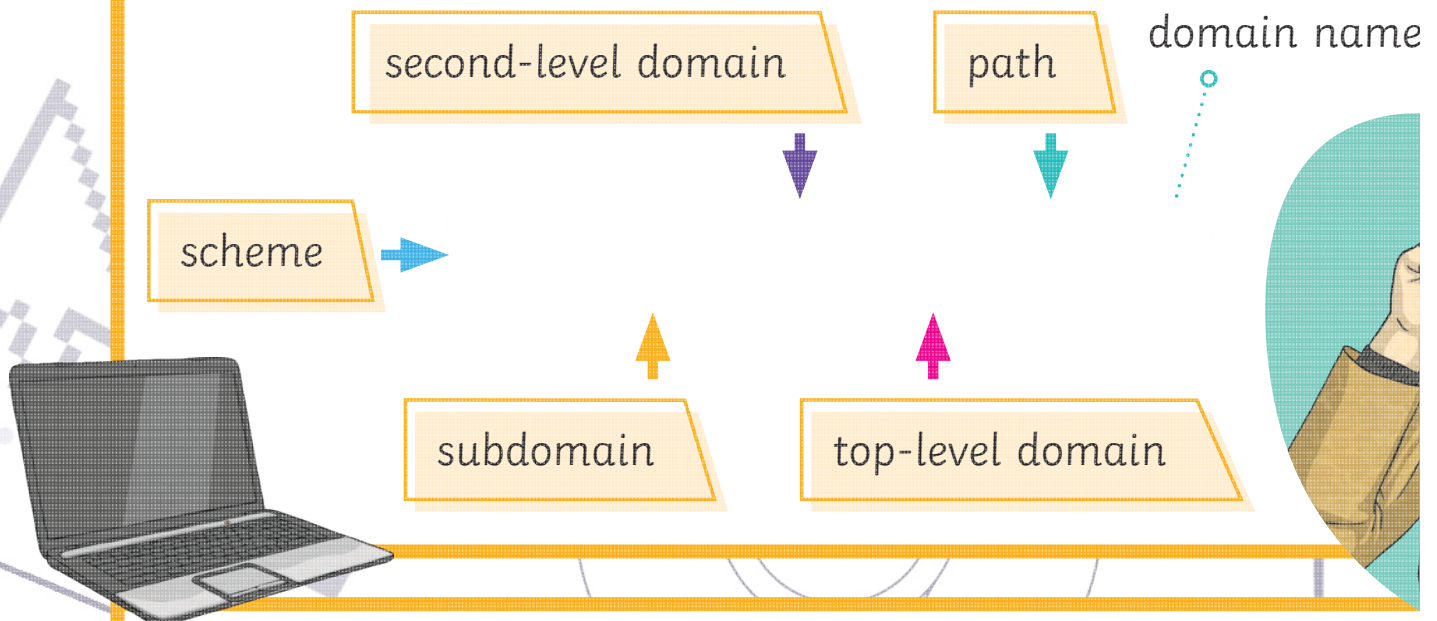


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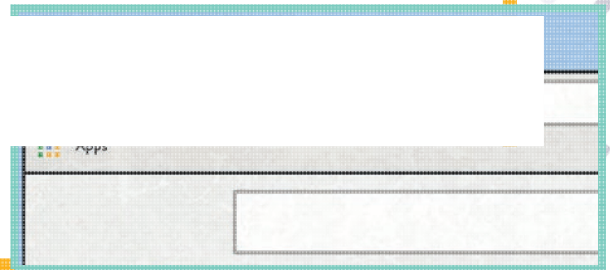


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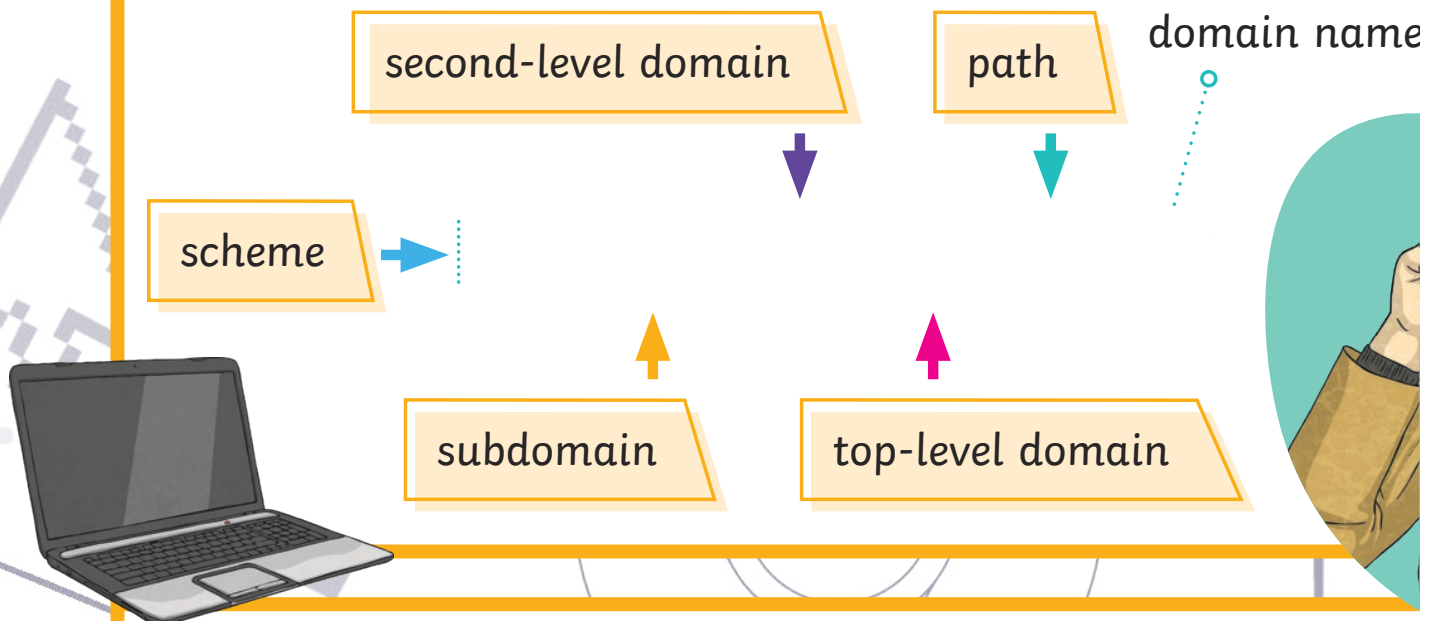


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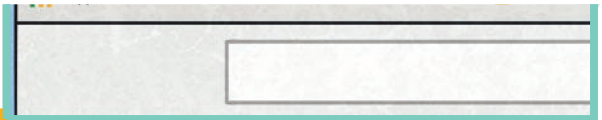


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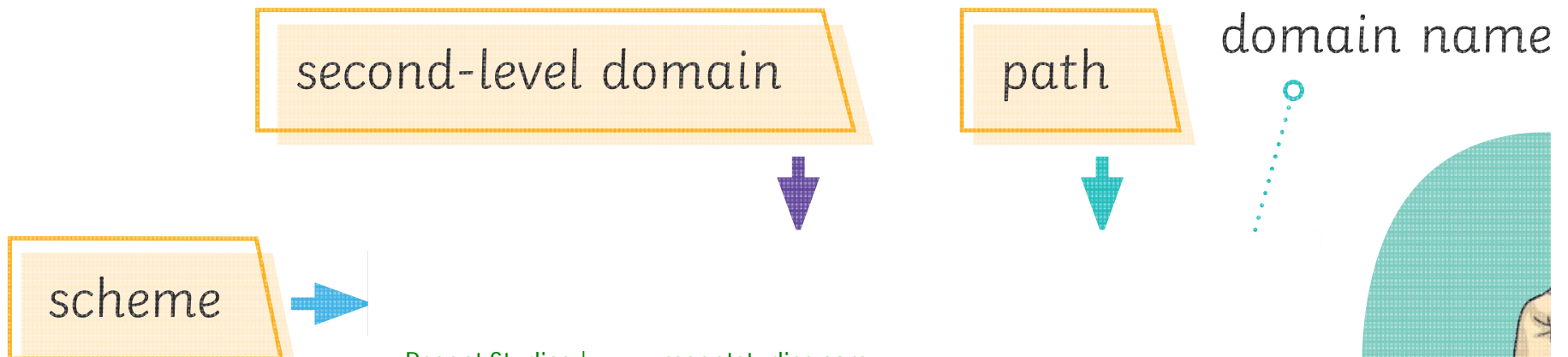


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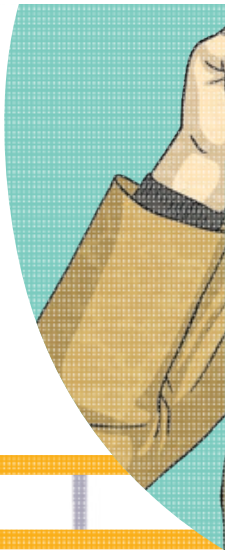
scheme



subdomain



top-level domain



Key Vocabulary

Internet

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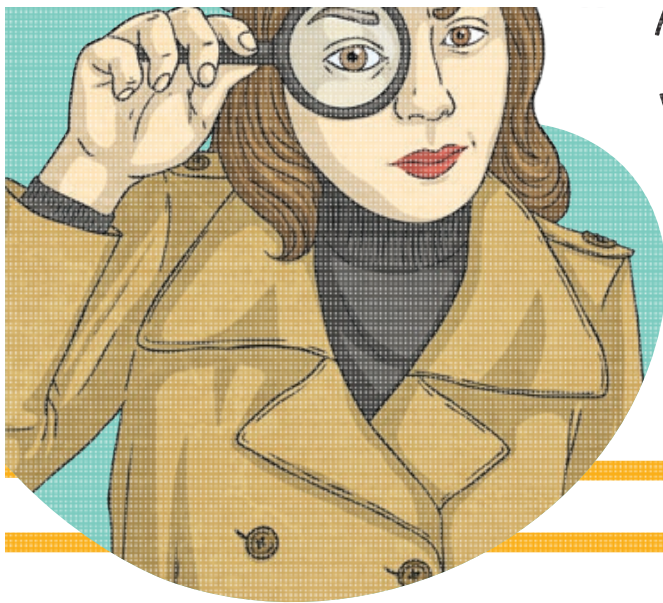
web crawler

Uniform Resource Locator (URL)

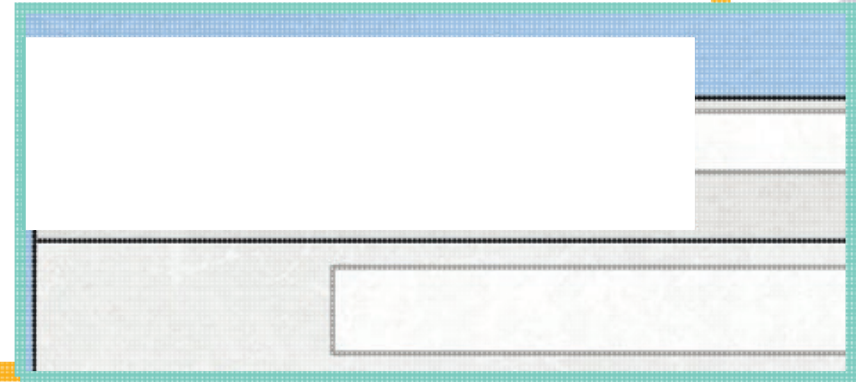
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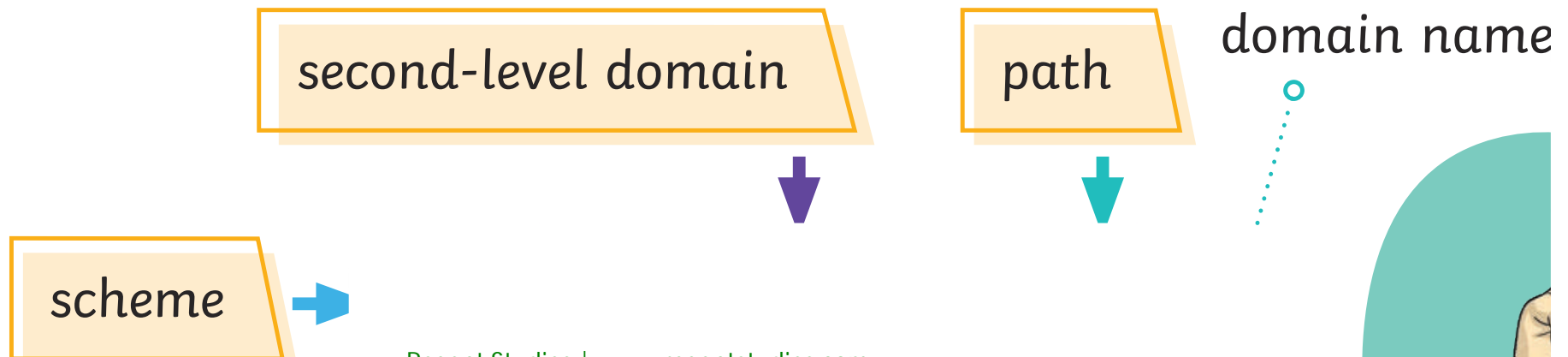


Strategic Search



A **search engine** is a service you use on the Internet. This requires a search term to be inputted.

URL Components



Searching Online

Use the Internet to help you find information via the World Wide Web. You can search for information, such as a group of words or a question.



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A web page is a specific page that is viewed on a

name



scheme



subdomain



top-level domain



Key Vocabulary

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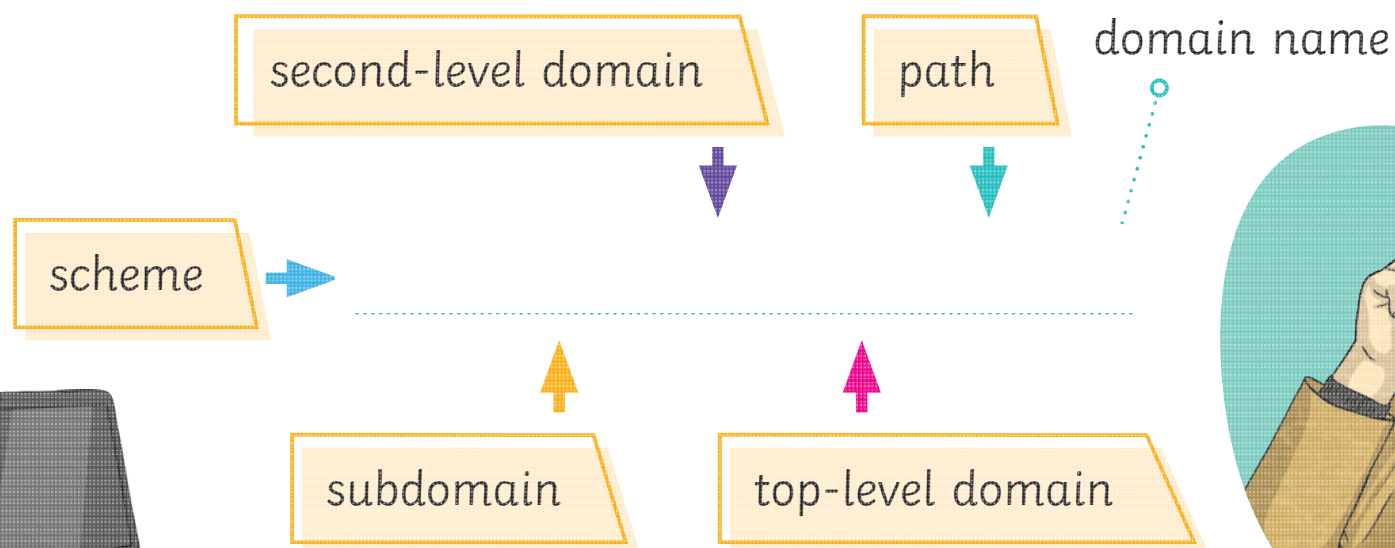
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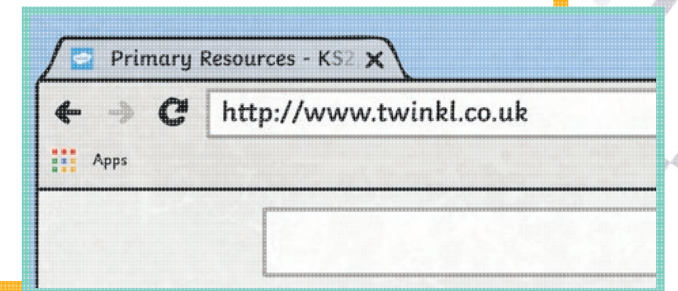
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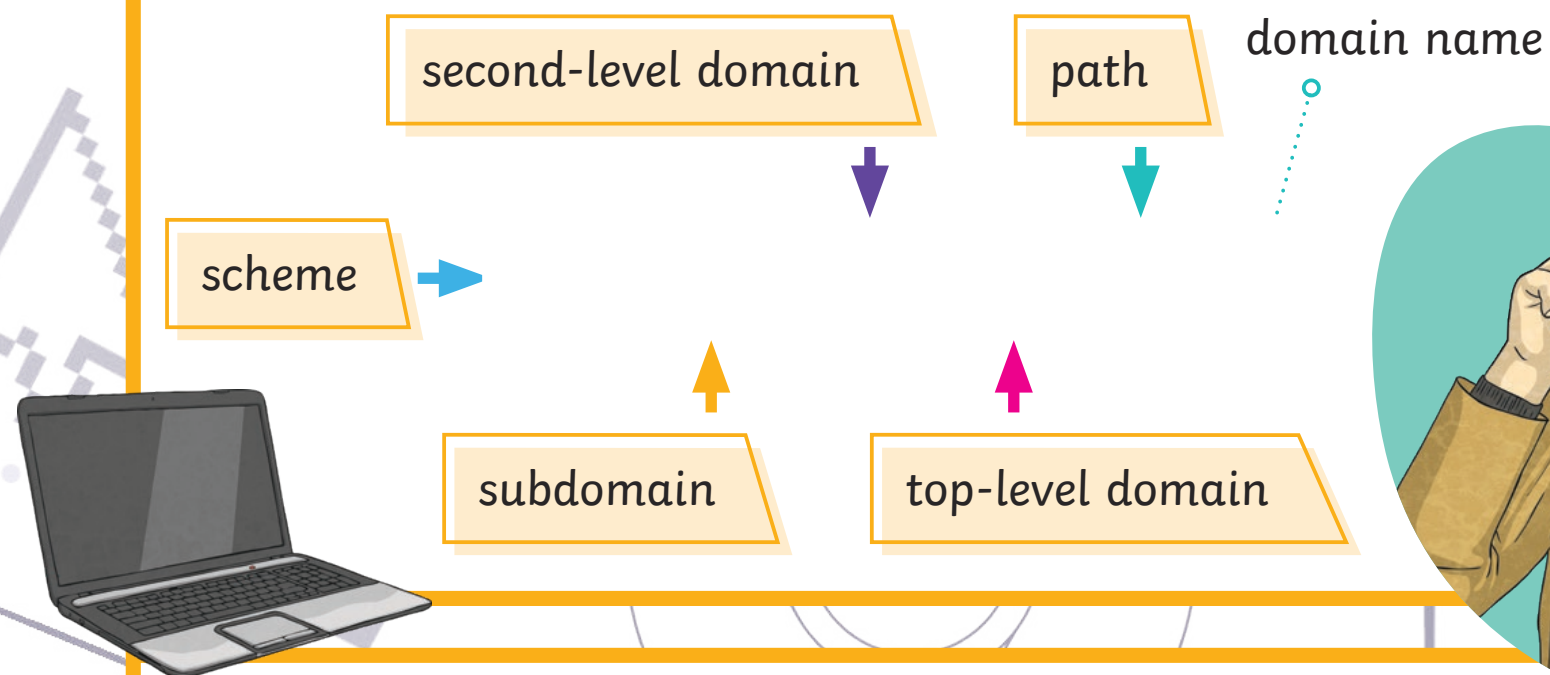
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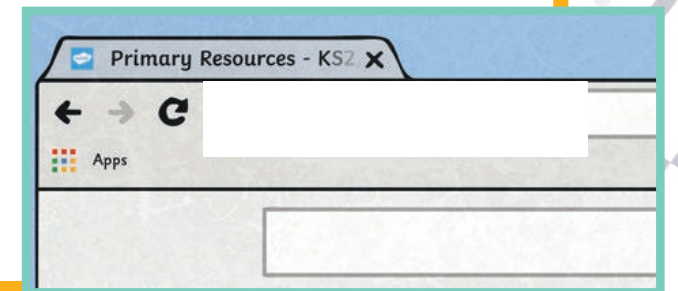
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website	protocol	search engine optimisation (SEO)
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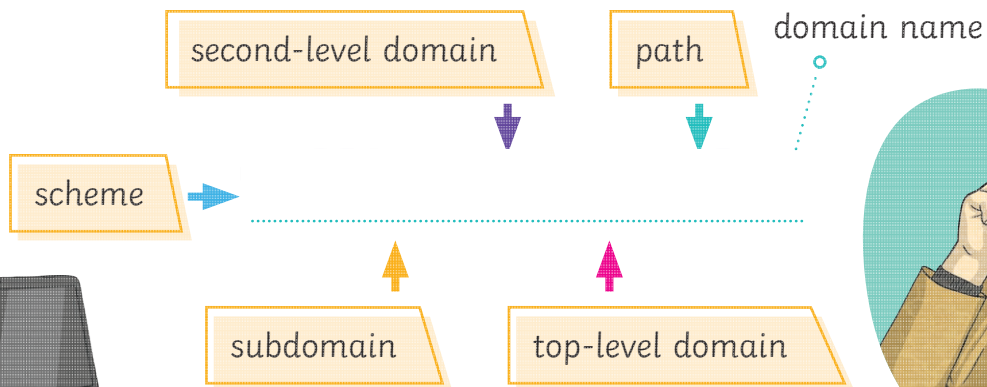
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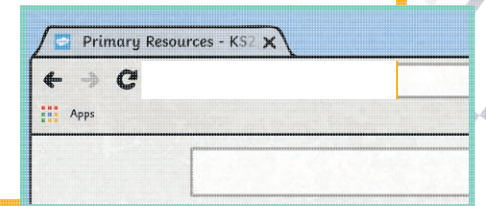
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search engine	web crawler	search terms
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web page	protocol	search engine optimisation (SEO)
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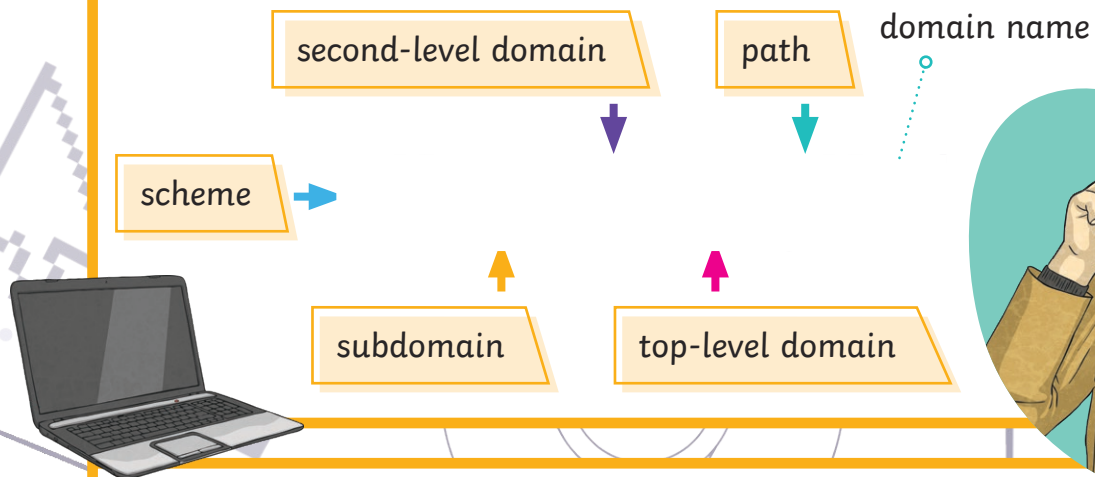
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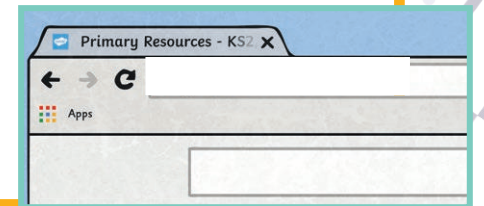
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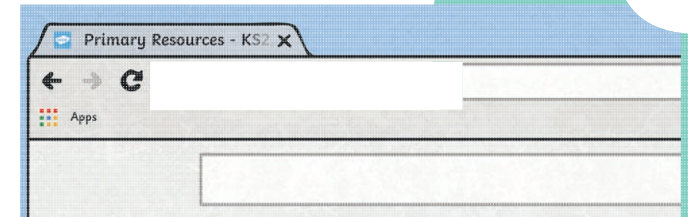


Strategic Searching Online

Fact Cards

Strategic Searching Online

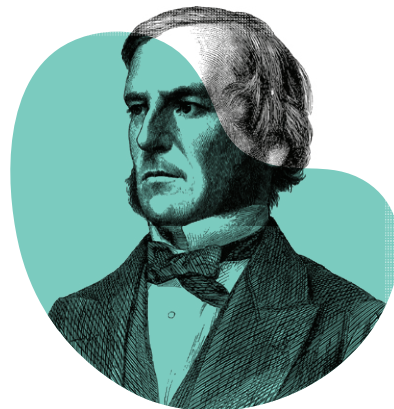
Search engines have their own index of web pages. A search engine index is where information about a web page is stored once a web crawler program has 'crawled' the website. Each search engine has its own index of web pages.



Strategic Searching Online

Boolean operators can be used to refine a search. The three basic Boolean operators are: AND, NOT and OR.

NOT
AND
OR



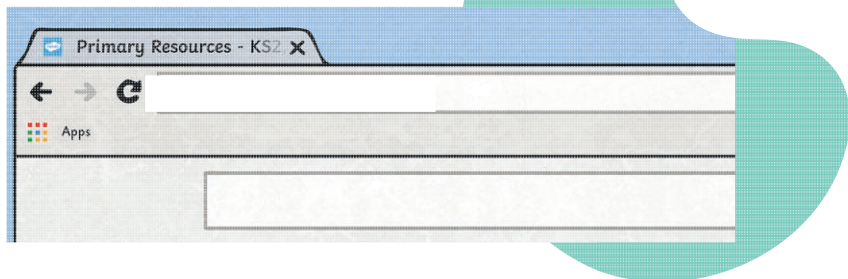
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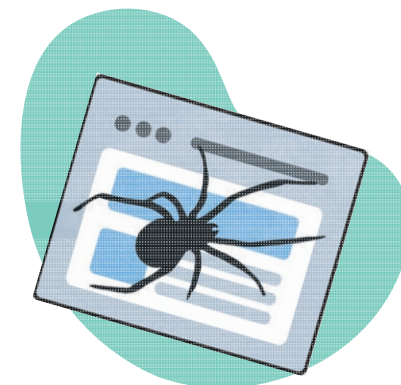
Strategic Searching Online

A web browser allows you access to the Internet. Once you are online, a search engine can be used within your web browser to search the World Wide Web.



Strategic Searching Online

Web crawler software used is used to crawl web pages. They move between links on websites. The information collected by web crawlers creates an index for the search engine.



Strategic Searching Online

Web pages in a returned search are ranked by a page ranking program. Each search engine has its own page ranking program.



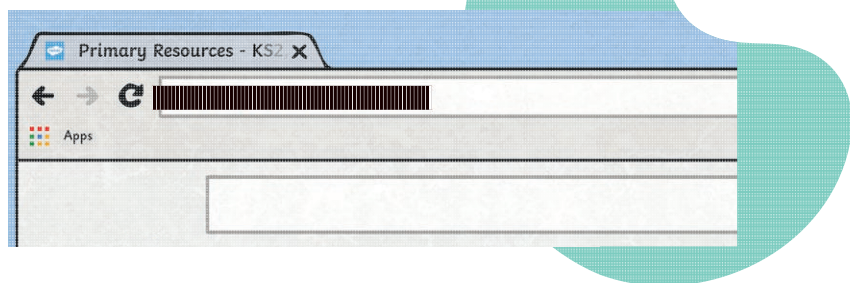
Strategic Searching Online

A secure website means that any information you input into it becomes encrypted. HTTPS and/or a padlock to the left of the URL show that a website is secure.



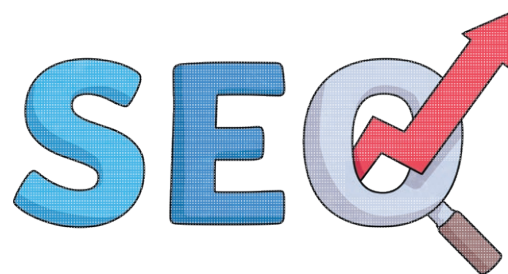
Strategic Searching Online

Search returns from a search engine can include web pages, images, videos, news articles and sponsored links.



Strategic Searching Online

Websites use search engine optimisation (SEO) to improve their page ranking.



Strategic Searching Online

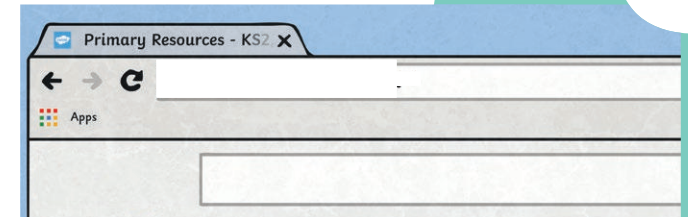
A website's URL is just like the address of a building. It is also split into multiple parts.

Strategic Searching Online

Fact Cards

Strategic Searching Online

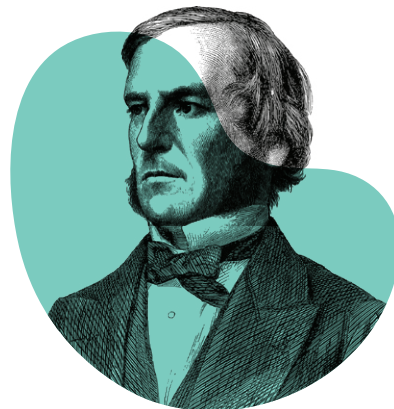
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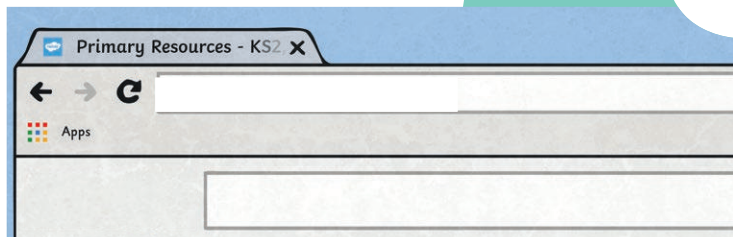
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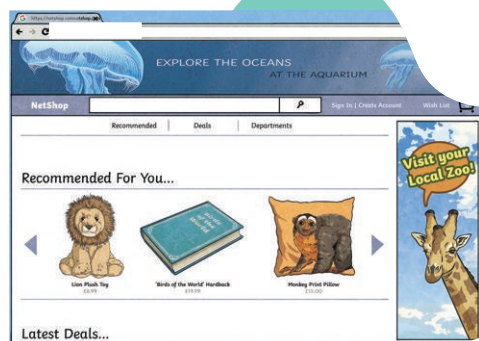
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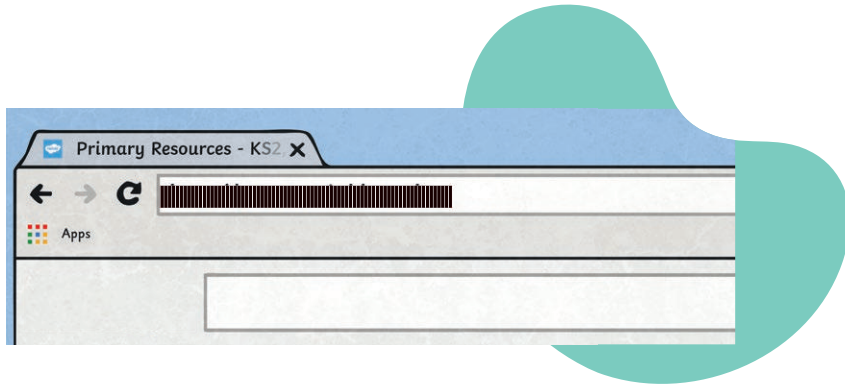
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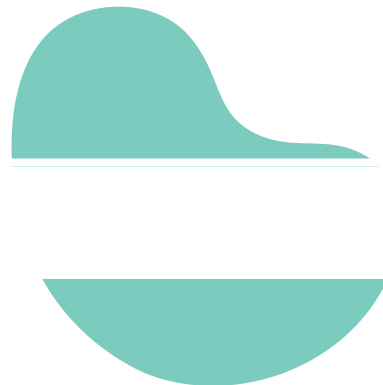
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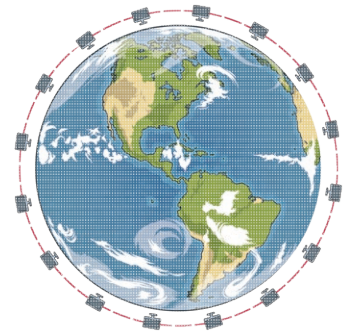
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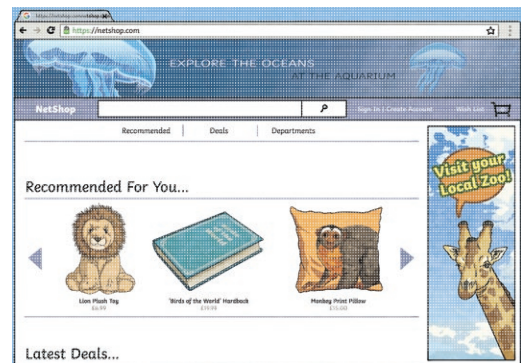
search engine



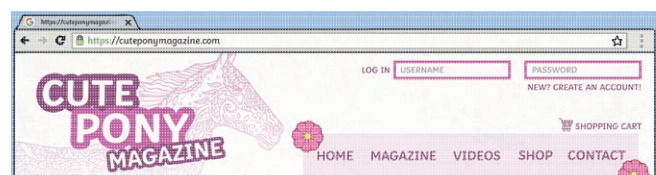
Internet



web page

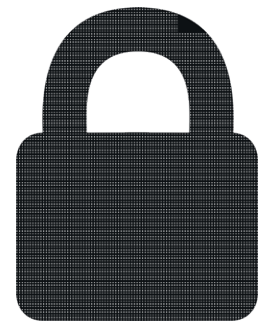


website



index

secure



protocol

search engine



optimisation (SEO)

ranking

trusted



web crawlers



Boolean
operator

NOT

AND

OR

refine

top-level domain

second-level
domain

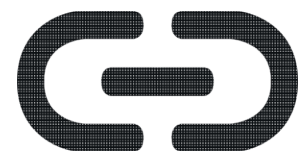
subdomain

web browser



Uniform Resource
Locator (URL)

hyperlink



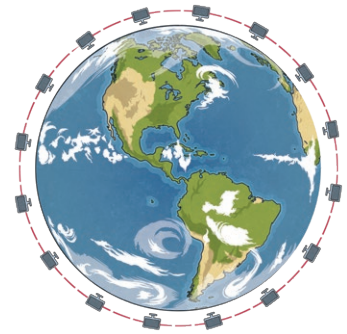
search terms

search engine results page (SERP)

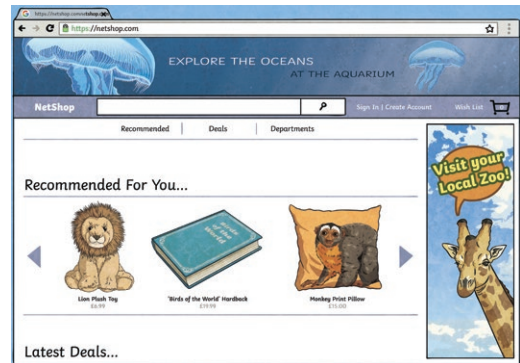
search engine



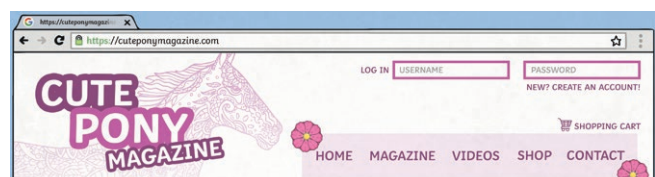
Internet



web page



website



index

secure



protocol

search engine



optimisation (SEO)

ranking

trusted



web crawlers



Boolean
operator

NOT

AND

OR

refine

top-level domain

**second-level
domain**

subdomain

web browser



**Uniform Resource
Locator (URL)**

hyperlink



search terms

search engine results page (SERP)

Strategic Searching Online

g	w	e	b	p	a	g	e	w	a	n	b	v	d	s	i	u
h	e	r	e	h	o	p	t	i	m	i	s	a	t	i	o	n
y	b	s	g	j	h	g	v	j	t	r	u	s	t	e	d	i
u	s	e	s	a	q	w	e	d	q	s	k	z	s	j	k	i
j	i	a	p	l	i	k	u	s	u	b	d	o	m	a	i	n
n	t	r	a	n	k	i	n	g	n	r	o	y	n	b	b	k
m	e	c	a	g	y	n	h	g	t	o	p	r	j	r	v	i
k	u	h	x	o	p	t	g	k	y	w	e	t	i	e	c	l
l	g	e	q	l	k	e	t	j	u	s	r	p	k	f	s	h
c	d	n	h	u	u	r	g	h	h	e	a	l	t	i	e	d
r	v	g	a	y	y	n	e	e	d	r	t	o	r	n	d	f
a	e	i	s	g	t	e	d	d	s	b	o	o	l	e	a	n
w	i	n	d	e	x	t	r	s	w	s	r	y	f	y	u	s
l	w	e	j	y	t	y	u	o	a	q	a	r	e	h	r	q
e	q	y	u	p	r	o	t	o	c	o	l	y	s	y	d	a
r	y	h	n	i	h	o	i	k	s	e	c	u	r	e	w	s
s	j	m	l	o	k	u	y	g	t	d	w	s	w	s	q	w



search engine

Internet

web page

website

index

secure

protocol

optimisation

ranking

trusted

crawlers

Boolean

refine

operator

subdomain

browser

Strategic Searching Online Answers

g	w	e	b	p	a	g	e	w	a	n	b	v	d	s	i	u
h	e	r	e	h	o	p	t	i	m	i	s	a	t	i	o	n
y	b	s	g	j	h	g	v	j	t	r	u	s	t	e	d	i
u	s	e	s	a	q	w	e	d	q	s	k	z	s	j	k	i
j	i	a	p	l	i	k	u	s	u	b	d	o	m	a	i	n
n	t	r	a	n	k	i	n	g	n	r	o	y	n	b	b	k
m	e	c	a	g	y	n	h	g	t	o	p	r	j	r	v	i
k	u	h	x	o	p	t	g	k	y	w	e	t	i	e	c	l
l	g	e	q	l	k	e	t	j	u	s	r	p	k	f	s	h
c	d	n	h	u	u	r	g	h	h	e	a	l	t	i	e	d
r	v	g	a	y	y	n	e	e	d	r	t	o	r	n	d	f
a	e	i	s	g	t	e	d	d	s	b	o	o	l	e	a	n
w	i	n	d	e	x	t	r	s	w	s	r	y	f	y	u	s
l	w	e	j	y	t	y	u	o	a	q	a	r	e	h	r	q
e	q	y	u	p	r	o	t	o	c	o	l	y	s	y	d	a
r	y	h	n	i	h	o	i	k	s	e	c	u	r	e	w	s
s	j	m	l	o	k	u	y	g	t	d	w	s	w	s	q	w



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g	w	e	b	p	a	g	e	w	a	n	b	v	d	s	i	u
h	e	r	e	h	o	p	t	i	m	i	s	a	t	i	o	n
y	b	s	g	j	h	g	v	j	t	r	u	s	t	e	d	i
u	s	e	s	a	q	w	e	d	q	s	k	z	s	j	k	i
j	i	a	p	l	i	k	u	s	u	b	d	o	m	a	i	n
n	t	r	a	n	k	i	n	g	n	r	o	y	n	b	b	k
m	e	c	a	g	y	n	h	g	t	o	p	r	j	r	v	i
k	u	h	x	o	p	t	g	k	y	w	e	t	i	e	c	l
l	g	e	q	l	k	e	t	j	u	s	r	p	k	f	s	h
c	d	n	h	u	u	r	g	h	h	e	a	l	t	i	e	d
r	v	g	a	y	y	n	e	e	d	r	t	o	r	n	d	f
a	e	i	s	g	t	e	d	d	s	b	o	o	l	e	a	n
w	i	n	d	e	x	t	r	s	w	s	r	y	f	y	u	s
l	w	e	j	y	t	y	u	o	a	q	a	r	e	h	r	q
e	q	y	u	p	r	o	t	o	c	o	l	y	s	y	d	a
r	y	h	n	i	h	o	i	k	s	e	c	u	r	e	w	s
s	j	m	l	o	k	u	y	g	t	d	w	s	w	s	q	w



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h	e	r	e	h	o	p	t	i	m	i	s	a	t	i	o	n
y	b	s	g	j	h	g	v	j	t	r	u	s	t	e	d	i
u	s	e	s	a	q	w	e	d	q	s	k	z	s	j	k	i
j	i	a	p	l	i	k	u	s	u	b	d	o	m	a	i	n
n	t	r	a	n	k	i	n	g	n	r	o	y	n	b	b	k
m	e	c	a	g	y	n	h	g	t	o	p	r	j	r	v	i
k	u	h	x	o	p	t	g	k	y	w	e	t	i	e	c	l
l	g	e	q	l	k	e	t	j	u	s	r	p	k	f	s	h
c	d	n	h	u	u	r	g	h	h	e	a	l	t	i	e	d
r	v	g	a	y	y	n	e	e	d	r	t	o	r	n	d	f
a	e	i	s	g	t	e	d	d	s	b	o	o	l	e	a	n
w	i	n	d	e	x	t	r	s	w	s	r	y	f	y	u	s
l	w	e	j	y	t	y	u	o	a	q	a	r	e	h	r	q
e	q	y	u	p	r	o	t	o	c	o	l	y	s	y	d	a
r	y	h	n	i	h	o	i	k	s	e	c	u	r	e	w	s
s	j	m	l	o	k	u	y	g	t	d	w	s	w	s	q	w



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Strategic Searching Online

g	w	e	b	p	a	g	e	w	a	n	b	v	d	s	i	u
h	e	r	e	h	o	p	t	i	m	i	s	a	t	i	o	n
y	b	s	g	j	h	g	v	j	t	r	u	s	t	e	d	i
u	s	e	s	a	q	w	e	d	q	s	k	z	s	j	k	i
j	i	a	p	l	i	k	u	s	u	b	d	o	m	a	i	n
n	t	r	a	n	k	i	n	g	n	r	o	y	n	b	b	k
m	e	c	a	g	y	n	h	g	t	o	p	r	j	r	v	i
k	u	h	x	o	p	t	g	k	y	w	e	t	i	e	c	l
l	g	e	q	l	k	e	t	j	u	s	r	p	k	f	s	h
c	d	n	h	u	u	r	g	h	h	e	a	l	t	i	e	d
r	v	g	a	y	y	n	e	e	d	r	t	o	r	n	d	f
a	e	i	s	g	t	e	d	d	s	b	o	o	l	e	a	n
w	i	n	d	e	x	t	r	s	w	s	r	y	f	y	u	s
l	w	e	j	y	t	y	u	o	a	q	a	r	e	h	r	q
e	q	y	u	p	r	o	t	o	c	o	l	y	s	y	d	a
r	y	h	n	i	h	o	i	k	s	e	c	u	r	e	w	s
s	j	m	l	o	k	u	y	g	t	d	w	s	w	s	q	w



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Strategic Searching Online Answers

g	w	e	b	p	a	g	e	w	a	n	b	v	d	s	i	u
h	e	r	e	h	o	p	t	i	m	i	s	a	t	i	o	n
y	b	s	g	j	h	g	v	j	t	r	u	s	t	e	d	i
u	s	e	s	a	q	w	e	d	q	s	k	z	s	j	k	i
j	i	a	p	l	i	k	u	s	u	b	d	o	m	a	i	n
n	t	r	a	n	k	i	n	g	n	r	o	y	n	b	b	k
m	e	c	a	g	y	n	h	g	t	o	p	r	j	r	v	i
k	u	h	x	o	p	t	g	k	y	w	e	t	i	e	c	l
l	g	e	q	l	k	e	t	j	u	s	r	p	k	f	s	h
c	d	n	h	u	u	r	g	h	h	e	a	l	t	i	e	d
r	v	g	a	y	y	n	e	e	d	r	t	o	r	n	d	f
a	e	i	s	g	t	e	d	d	s	b	o	o	l	e	a	n
w	i	n	d	e	x	t	r	s	w	s	r	y	f	y	u	s
l	w	e	j	y	t	y	u	o	a	q	a	r	e	h	r	q
e	q	y	u	p	r	o	t	o	c	o	l	y	s	y	d	a
r	y	h	n	i	h	o	i	k	s	e	c	u	r	e	w	s
s	j	m	l	o	k	u	y	g	t	d	w	s	w	s	q	w



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End of Unit Assessment | Computing | Year 5 | Strategic Searching Online

Working Towards the Expected Level	Working At the Expected Level	Working At Greater Depth
<p>Children can search for information using appropriate search engines. Children can refine their searches using appropriate keywords. With support, children can begin to use strategies to check the reliability of information on web pages. With support, children can begin to explain how search engines work using some key vocabulary. Children can talk about the way search results are selected and ranked. Children can explain what search engine optimisation (SEO) is.</p>	<p>Children search for information using appropriate search engines and can refine their search terms by using keywords. Children can refine their searches using Boolean operators with some guidance. Children can use strategies to check the reliability of information on web pages. Children can explain how search engines work using key vocabulary, such as web indexing and web crawlers. Children can understand that search results are ranked and can explain how page ranking works. Children can explain what search engine optimisation (SEO) is and can suggest some SEO improvements for a web page.</p>	<p>Children search for information using appropriate search engines and can refine their search terms by using keywords and Boolean operators. Children can confidently use strategies to check the reliability of information on web pages. Children can explain, with confidence, how search engines work using correct terminology and key vocabulary. Children can understand that search results are ranked and can confidently explain how page ranking works. Children can explain what search engine optimisation (SEO) is and can confidently suggest some SEO improvements for a web page.</p>
33%	33%	33%
Name	Name	Name



		Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	% of class		
% met by child		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%				
Working Towards the Expected Level	Children can search for information using appropriate search engines.																																					0%			
	Children can refine their searches using appropriate keywords.																																						0%		
	With support, children can begin to use strategies to check the reliability of information on web pages.																																						0%		
	With support, children can begin to explain how search engines work using some key vocabulary.																																							0%	
	Children can talk about the way search results are selected and ranked.																																							0%	
Working At the Expected Level	Children can explain what search engine optimisation (SEO) is.																																							0%	
	Children search for information using appropriate search engines and can refine their search terms by using keywords.																																							0%	
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	Children can explain how search engines work using key vocabulary, such as web indexing and web crawlers.																																							0%	
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	Children can explain what search engine optimisation (SEO) is and can suggest some SEO improvements for a web page.																																							0%	
Working At Greater Depth	Children search for information using appropriate search engines and can refine their search terms by using keywords and Boolean operators.																																							0%	
	Children can confidently use strategies to check the reliability of information on web pages.																																							0%	
	Children can explain, with confidence, how search engines work using correct terminology and key vocabulary.																																								0%
	Children can understand that search results are ranked and can confidently explain how page ranking works.																																								0%
	Children can explain what search engine optimisation (SEO) is and can confidently suggest some SEO improvements for a web page.																																							0%	

End of Unit Assessment | Computing | Year 5 | Strategic Searching Online

Lesson Aim Success Criteria *Insert 'y' against the criteria the child has met. If they have not met the criteria, insert 'n'

		Name																																% met by child														
		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%							
1	To find out information on the Internet using search engines.																																									0%						
	I can explain what a search engine is.																																											0%				
	I can explain what a search engine is used for.																																												0%			
	I can access a trusted search engine.																																												0%			
	I can complete a search to find a website or specific information.																																												0%			
2	To use a search engine effectively by refining the search term.																																													0%		
	I can use keywords to refine my search.																																													0%		
	I can explain how using keywords in my search terms can help when using search engines.																																													0%		
	To know how to use Boolean operators to refine a search.																																													0%		
	I can explain how Boolean operators can affect my search results.																																													0%		
	I can explain how Boolean operators can be useful when using a search engine.																																													0%		
3	To identify what makes a website reliable and trustworthy.																																													0%		
	I can explain that just because information is online doesn't mean it is true.																																													0%		
	I can identify what makes a trusted web page.																																														0%	
	I can identify why trusted websites are important.																																															0%
4	To understand how search engines work.																																															0%
	I can explain what a web crawler is.																																															0%
	I can explain how web indexing works.																																															0%
	I can explain how search engines work.																																															0%
5	To understand and explain what page ranking is.																																															0%
	I understand that search results are ranked.																																															0%
	I can explain how search results are ranked.																																															0%
	I can suggest some of the criteria that search engines use to decide on web page ranking.																																															0%
	I can compare the page ranking across different search engines.																																															0%
6	To use SEO to improve a web page.																																															0%
	I can explain what SEO is.																																															0%
	I can explain why SEO is used on websites.																																															0%
	I can compare web pages against a specification.																																															0%
	I can suggest SEO improvements on a website.																																															0%

Regent Studies | www.regentstudies.com

NC Aims Covered in Strategic Searching Online

Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

Computing | Year 5 | Strategic Searching Online

Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
To find out information on the Internet using search engines.	To use a search engine effectively by refining the search term.	To identify what makes a website reliable and trustworthy.	To understand how search engines work.	To understand and explain what page ranking is.	To use SEO to improve a web page.
I can explain what a search engine is.	I can use keywords to refine my search.	I can explain that just because information is online doesn't mean it is true.	I can explain what a web crawler is.	I understand that search results are ranked.	I can explain what SEO is.
I can explain what a search engine is used for.	I can explain how using keywords in my search terms can help when using search engines.	I can identify what makes a trusted web page.	I can explain how web indexing works.	I can explain how search results are ranked.	I can explain why SEO is used on websites.
I can access a trusted search engine.	To know how to use Boolean operators to refine a search.	I can identify why trusted websites are important.	I can explain how search engines work.	I can suggest some of the criteria that search engines use to decide on web page ranking.	I can compare web pages against a specification.
I can complete a search to find a website or specific information.	I can explain how Boolean operators can affect my search results.			I can compare the page ranking across different search engines.	I can suggest SEO improvements on a website.
	I can explain how Boolean operators can be useful when using a search engine.				

Strategic Searching Online



K

W

L

What I know

What I want to know

What I have learnt



SEO 



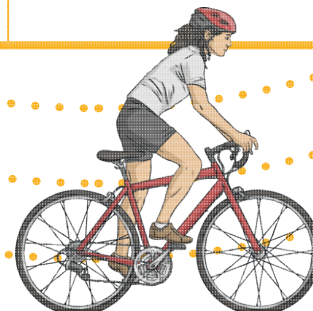
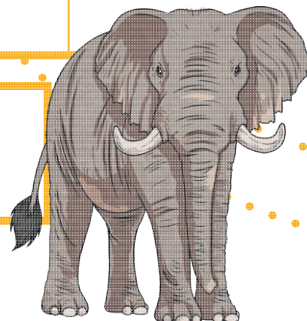
Hidden-Word Search

Using a search engine of your choice, answer the following questions. When you have answered all of the questions, can you use the highlighted letters to discover the hidden words?



<p>Which is the second-largest planet in the Solar System?</p> <p>-----</p>	<p>What is the largest living land-mammal?</p> <p>-----/</p> <p>-----</p>	<p>In which American state would you find Hollywood?</p> <p>-----</p>	<p>Which animal's full name means nose-horned?</p> <p>-----</p>	<p>What is acrophobia the fear of?</p> <p>-----</p>
<p>What is the largest waterfall in the world?</p> <p>-----/-----</p>	<p>The Olympic athlete Sir Chris Hoy has won a gold medals in which sport?</p> <p>-----</p>	<p>What is the largest ocean in the world?</p> <p>-----/-----/-----</p> <p>-----</p>	<p>In which city is the Camp Nou football stadium?</p> <p>-----</p>	<p>What is the name of the bone found between the elbow and the shoulder?</p> <p>-----</p>

Hidden words: -----



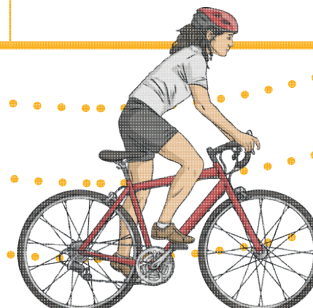
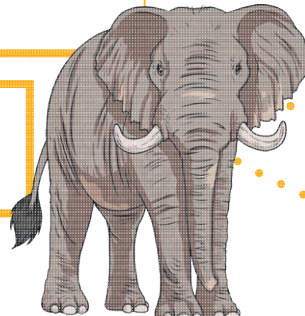
Hidden-Word Search

Using a search engine of your choice, answer the following questions. When you have answered all of the questions, can you use the highlighted letters to discover the hidden words?



<p>Which is the second-largest planet in the Solar System?</p> <p>Saturn</p>	<p>What is the largest living land-mammal?</p> <p>African Elephant</p>	<p>In which American state would you find Hollywood?</p> <p>California</p>	<p>Which animal's full name means nose-horned?</p> <p>rhinoceros</p>	<p>What is acrophobia the fear of?</p> <p>heights</p>
<p>What is the largest waterfall in the world?</p> <p>Angel Falls</p>	<p>The Olympic athlete Sir Chris Hoy has won a gold medals in which sport?</p> <p>cycling</p>	<p>What is the largest ocean in the world?</p> <p>The Pacific Ocean</p>	<p>In which city is the Camp Nou football stadium?</p> <p>Barcelona</p>	<p>What is the name of the bone found between the elbow and the shoulder?</p> <p>humerus</p>

Hidden word answer: search engine



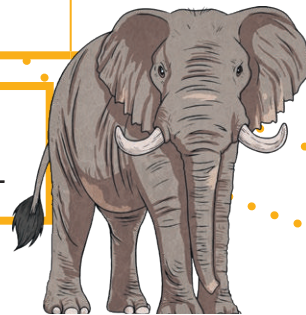
Hidden-Word Search

Using a search engine of your choice, answer the following questions. When you have answered all of the questions, can you use the highlighted letters to discover the hidden words?



Which is the second-largest planet in the Solar System? _ _ _ _ _ / _ _ _ _ _	What is the largest living land-mammal? _ _ _ _ _ / _ _ _ _ _	In which American state would you find Hollywood? _ _ _ _ _	Which animal's full name means nose-horned? _ _ _ _ _	What is acrophobia the fear of? _ _ _ _ _
What is the largest waterfall in the world? _ _ _ _ / _ _ _ _ _	The Olympic athlete Sir Chris Hoy has won a gold medals in which sport? _ _ _ _ _	What is the largest ocean in the world? _ _ _ / _ _ _ _ _ / _ _ _ _ _	In which city is the Camp Nou football stadium? _ _ _ _ _	What is the name of the bone found between the elbow and the shoulder? _ _ _ _ _

Hidden words: _ _ _ _ _



Hidden-Word Search

Using a search engine of your choice, answer the following questions. When you have answered all of the questions, can you use the highlighted letters to discover the hidden words?



<p>Which is the second-largest planet in the Solar System?</p> <p>Saturn</p>	<p>What is the largest living land-mammal?</p> <p>African Elephant</p>	<p>In which American state would you find Hollywood?</p> <p>California</p>	<p>Which animal's full name means nose-horned?</p> <p>rhinoceros</p>	<p>What is acrophobia the fear of?</p> <p>heights</p>
<p>What is the largest waterfall in the world?</p> <p>Angel Falls</p>	<p>The Olympic athlete Sir Chris Hoy has won a gold medals in which sport?</p> <p>cycling</p>	<p>What is the largest ocean in the world?</p> <p>The Pacific Ocean</p>	<p>In which city is the Camp Nou football stadium?</p> <p>Barcelona</p>	<p>What is the name of the bone found between the elbow and the shoulder?</p> <p>humerus</p>

Hidden word answer: search engine

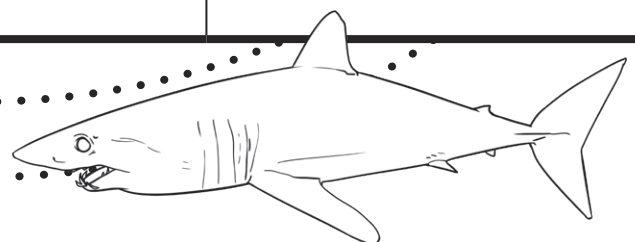


Refine It

Use a search engine to find the answer to the following questions. You must try to refine your search terms as much as possible. Can you complete the search with the fewest words possible?



Search Question	Search Terms Tried	Search Term with Fewest Words
What is the capital city of Türkiye?		
Who is the UK's longest-reigning monarch?		
Who is the richest person in the world?		
How many species of shark are there in the ocean?		
How big is the Statue of Liberty?		



Refine It Challenge

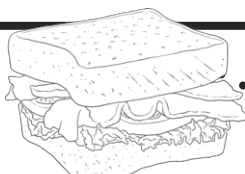
Use Boolean operators to discover how the number of search returns can change. Use the final blank box to create your own.



Search Terms Inputted	Number of Search Returns	Search Terms Inputted	Number of Search Returns
dog		sandwich	
cat		sausage	
dog cat		sandwich sausage	
dog AND cat		sandwich AND sausage	
dog OR cat		sandwich OR sausage	
cat -dog		sandwich -sausage	
dog -cat		sausage -sandwich	



Search Terms Inputted	Number of Search Returns	Search Terms Inputted	Number of Search Returns
UK			
Liverpool			
UK Liverpool			
UK AND Liverpool			
UK OR Liverpool			
UK -Liverpool			
Liverpool -UK			

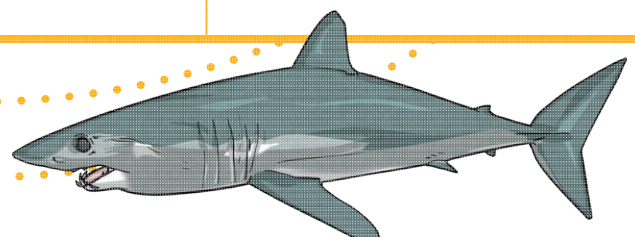
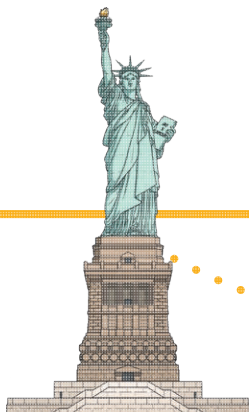


Refine It

Use a search engine to find the answer to the following questions. You must try to refine your search terms as much as possible. Can you complete the search with the fewest words possible?



Search Question	Search Terms Tried	Search Term with Fewest Words
What is the capital city of Türkiye?		
Who is the UK's longest-reigning monarch?		
Who is the richest person in the world?		
How many species of shark are there in the ocean?		
How big is the Statue of Liberty?		



Refine It Challenge

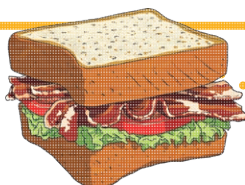
Use Boolean operators to discover how the number of search returns can change. Use the final blank box to create your own.



Search Terms Inputted	Number of Search Returns	Search Terms Inputted	Number of Search Returns
dog		sandwich	
cat		sausage	
dog cat		sandwich sausage	
dog AND cat		sandwich AND sausage	
dog OR cat		sandwich OR sausage	
cat -dog		sandwich -sausage	
dog -cat		sausage -sandwich	



Search Terms Inputted	Number of Search Returns	Search Terms Inputted	Number of Search Returns
UK			
Liverpool			
UK Liverpool			
UK AND Liverpool			
UK OR Liverpool			
UK -Liverpool			
Liverpool -UK			

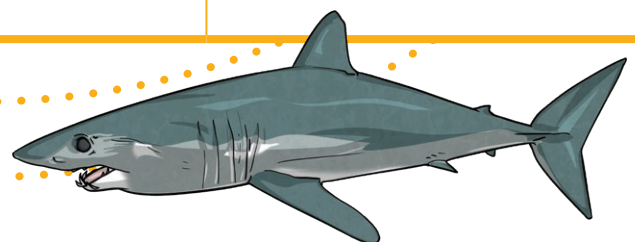


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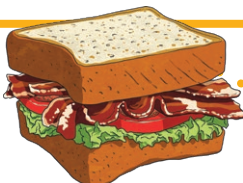
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Search Terms Inputted	Number of Search Returns	Search Terms Inputted	Number of Search Returns
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Liverpool			
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UK -Liverpool			
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Strategic Searching Online: Search Engines

National Curriculum Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.		Lesson Duration It is estimated that this lesson will take approximately 60 minutes.	
Aim To find out information on the Internet using search engines.			
Success Criteria I can explain what a search engine is. I can explain what a search engine is used for. I can access a trusted search engine. I can complete a search to find a website or specific information.		Key Vocabulary Browser, Internet, search engine, network, search results, search terms, URL, web browser, web page, website, World Wide Web (www).	
Resources: Lesson Pack PC devices, such as laptops, Chromebooks and/or tablets		Preparation one per child Differentiated Search Engines Crossword Activity Sheet - one per child In order to activate prior knowledge and develop a purpose for learning through interests, we recommend you begin the KWL Grid prior to starting this unit. It is advised that appropriate search engines are chosen prior to the start of the lesson.	

Prior Learning: It would be helpful if children have accessed _____, where children will have briefly looked at the Internet and one-word searches. It would also be beneficial that the children would have been exposed to a computer, laptop or Chromebook, had the opportunity to use these devices and be familiar with the basic skills needed to use them.

Learning Sequence

	Knowledge Organiser: Introduce the topic and Knowledge Organiser . Explain that the Knowledge Organiser has all the key information and vocabulary that the children will need to learn and understand by the end of this unit. Look through this together discussing what they already know and underline words that they don't yet know. We recommend completing one per child at UKS2.	
	Finding Out Information: Using the Lesson Presentation , children discuss where they would go to find out information about a given topic or where they would go if they needed a question answered.	
	The Internet: Using the Lesson Presentation , recap what the Internet is and discuss the variety of web browsers that can be used. What can the children remember about the Internet from Year 3?	
	Search Engines: Using the Lesson Presentation , explain to children what a search engine is and what they are used for. Explain the keyword URL and where it is on a web page. This can be done by showing the URL of different websites of your choice. Explain that a URL can give a clue as to what the web page is about. Gather the children's examples of search engines and then gather ideas on how they might use search engines. Write ideas down to place on a computing display. Can the children think of times when a search engine would be useful?	
 	Using Search Engines: Using the Lesson Presentation , show children what a search engine looks like and where to input search terms. This can be done by the address bar or the search bar. Children can input a search term into a search engine themselves or this can be demonstrated by an adult. The search term can be changed to fit any topic but the following slide on the Lesson Presentation will need amending.	

	<p>Search Results: Using the Lesson Presentation, discuss and show children what can be seen on a search result. Discuss and show that some search results generate popular questions and answers or related images and videos.</p>	
	<p>Using Search Engines: Using the questions on the Lesson Presentation, ask children to use the search engine to find the answers to the questions. This can be done in groups or independently. Using the prompt questions on the Lesson Presentation, create a mind map or list of tips that might make using search engines easier. This could be placed on the wall for children to refer to later in the lesson or in future lessons.</p>	
	<p>Using Search Engines: Using the differentiated Search Engines Crossword Activity Sheets, children should use a chosen search engine on a device to solve the clues in order to complete the crossword. This activity can be done both independently or as a pair or part of a group.</p> <p>Can the children explain how they would check to see if the website is relevant?</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>Children complete the eight words which fit into the crossword, using a search engine. The starting letter is given for a selection of words.</p> </div> <div style="text-align: center;">  <p>Children complete the fifteen words that fit into the crossword, using a search engine. Some letters are given for a selection of words.</p> </div> <div style="text-align: center;">  <p>Children to complete the fifteen words which fit into the crossword, using a search engine.</p> </div> </div>	
	<p>Check: Using the differentiated Search Engines Crossword Activity Sheet Answers, allow children to check their answers.</p>	

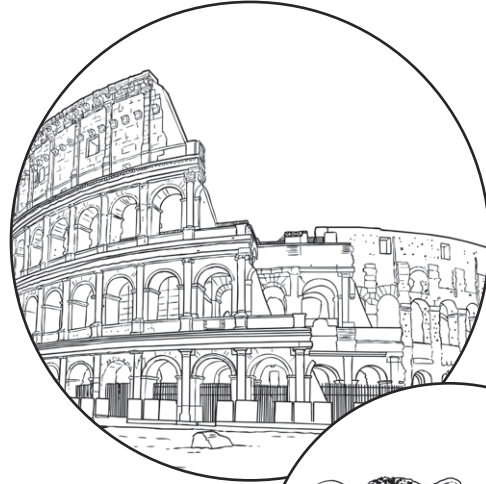
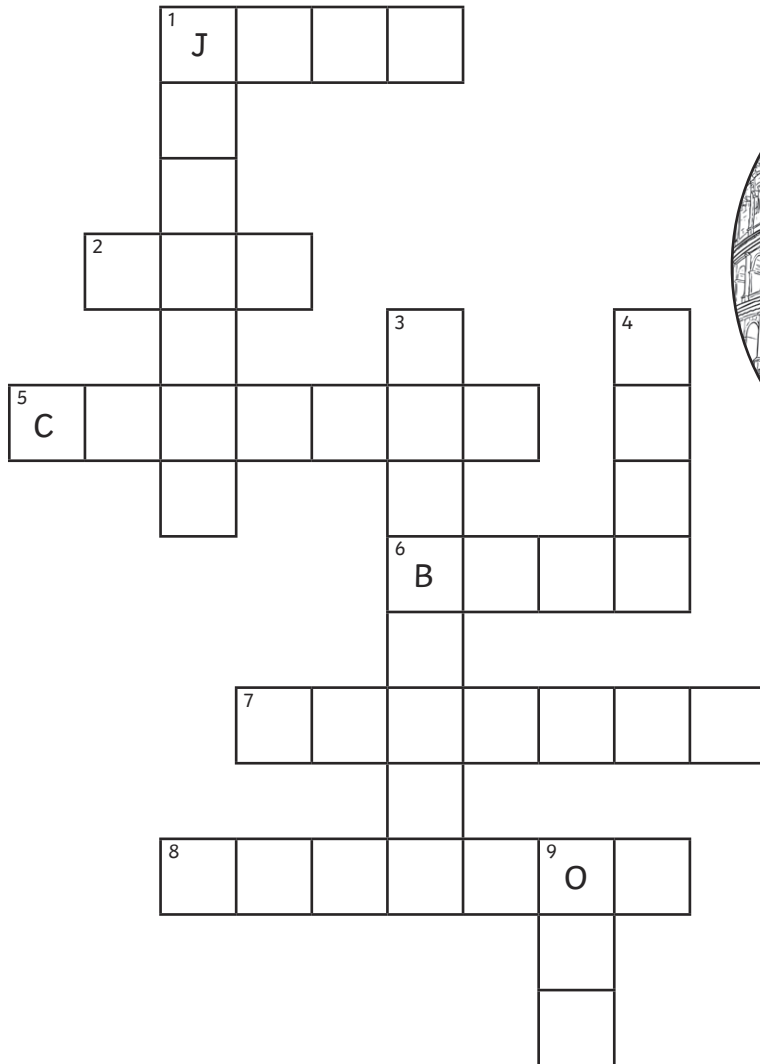
<p>Exploreit</p> <p>Searchit: Children will complete _____ to practise their search engine efficiency.</p> <p>Presentit: Children write instructions on how to use a search engine in the form of an information booklet or presentation for younger children.</p>

<p>Assessment Notes:</p>

<p>Disclaimer</p> <p>This unit involves children searching on the Internet. Please be mindful of search terms/topics used and connotations that could result in inappropriate links and pages. Child-friendly search engines are advised. Ensure your firewall settings are set at the appropriate levels necessary and your anti-virus software is up to date. It is good practice to ensure screen content can be seen at all times and that children know what to do if they see something on the Internet that makes them feel uncomfortable.</p>

Search Engines Crossword

To find out information on the Internet using search engines.



Across

1. A baby kangaroo (4)
2. The number of legs an ant has (3)
5. The fastest animal on Earth (7)
6. The primary colour on Scotland's national flag (4)
7. The country where Christmas trees originally came from (7)
8. A nine-sided shape (7)

Down

1. The largest planet in our Solar System (7)
3. Australia's capital city (8)
4. Italy's capital city (4)
9. Acorns come from this tree (3)

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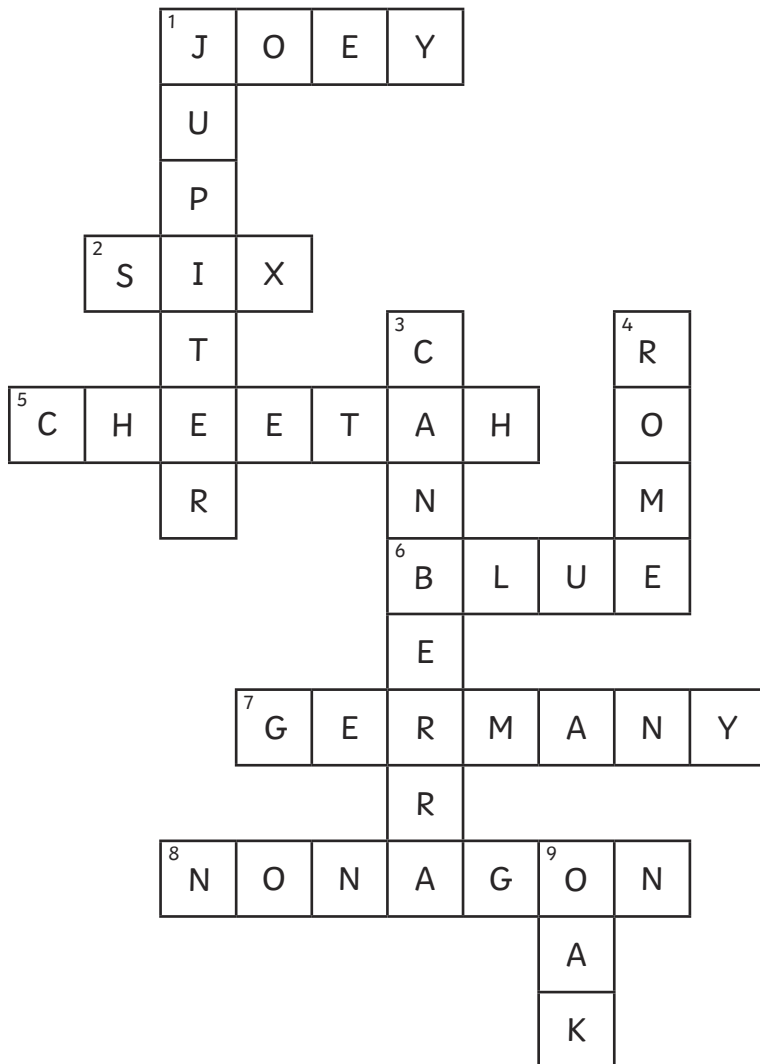
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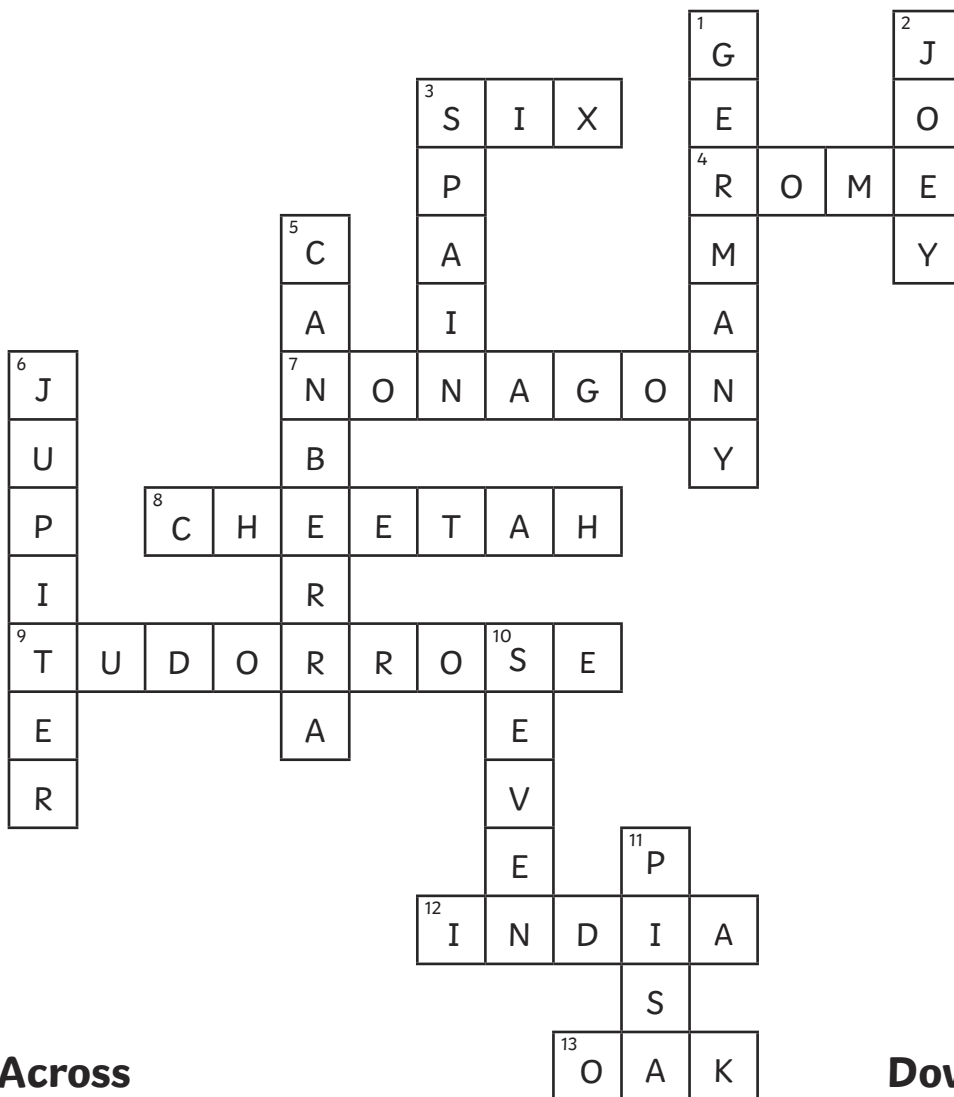
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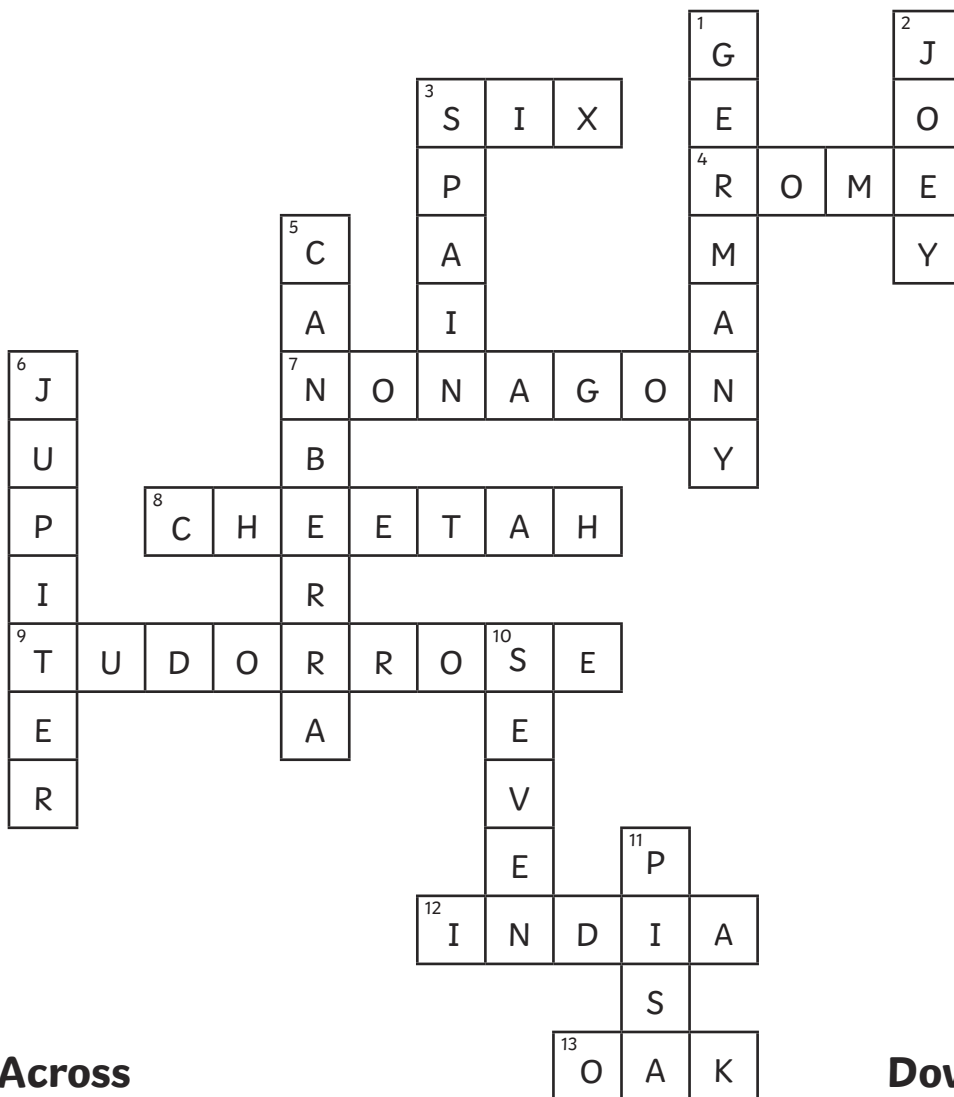
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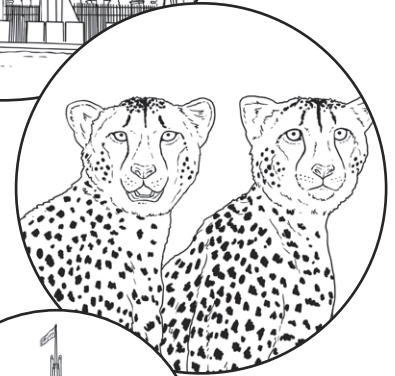
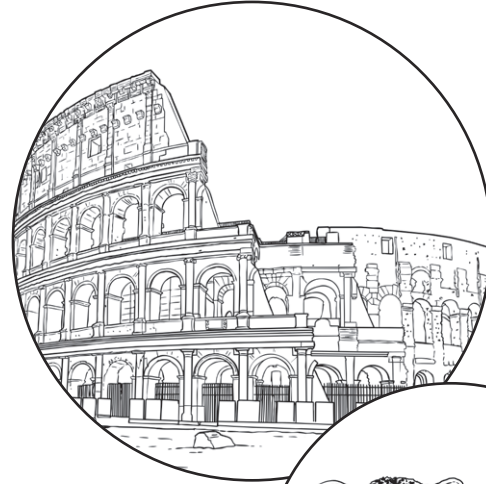
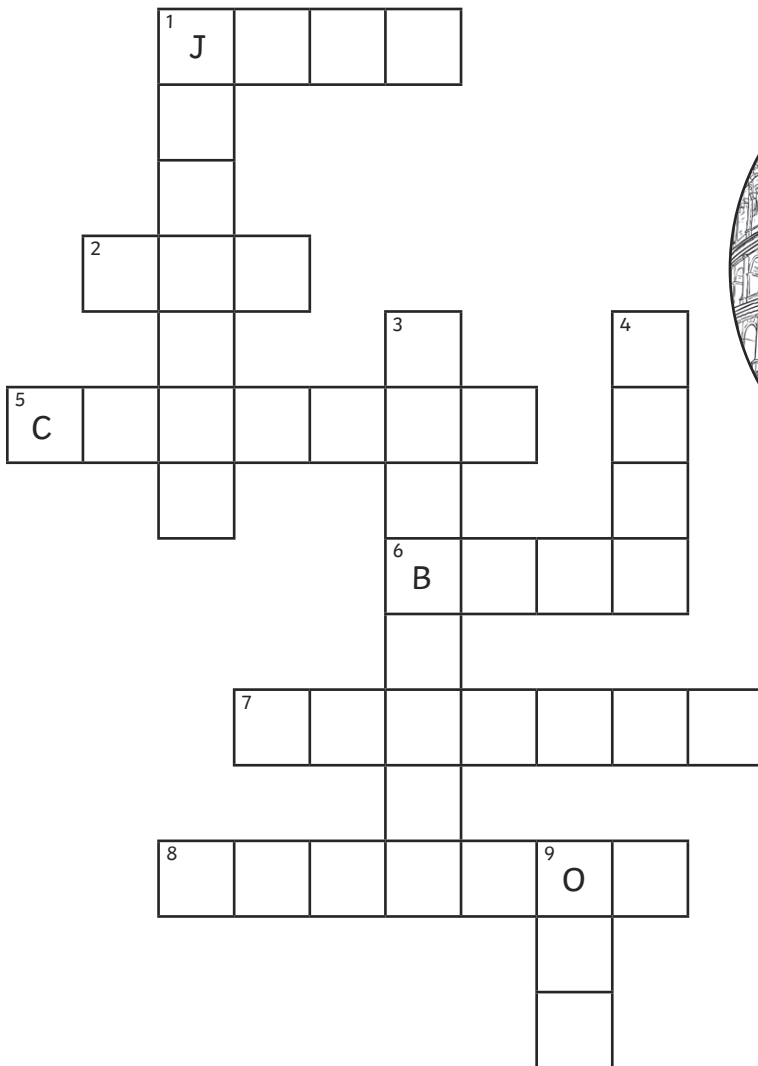
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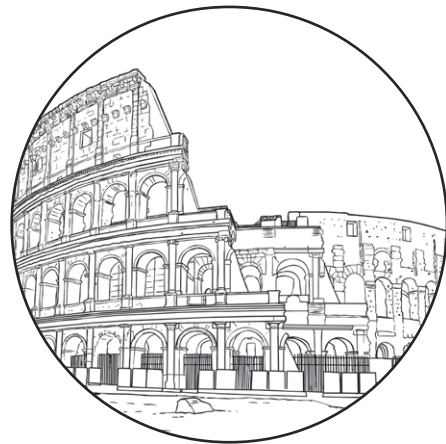
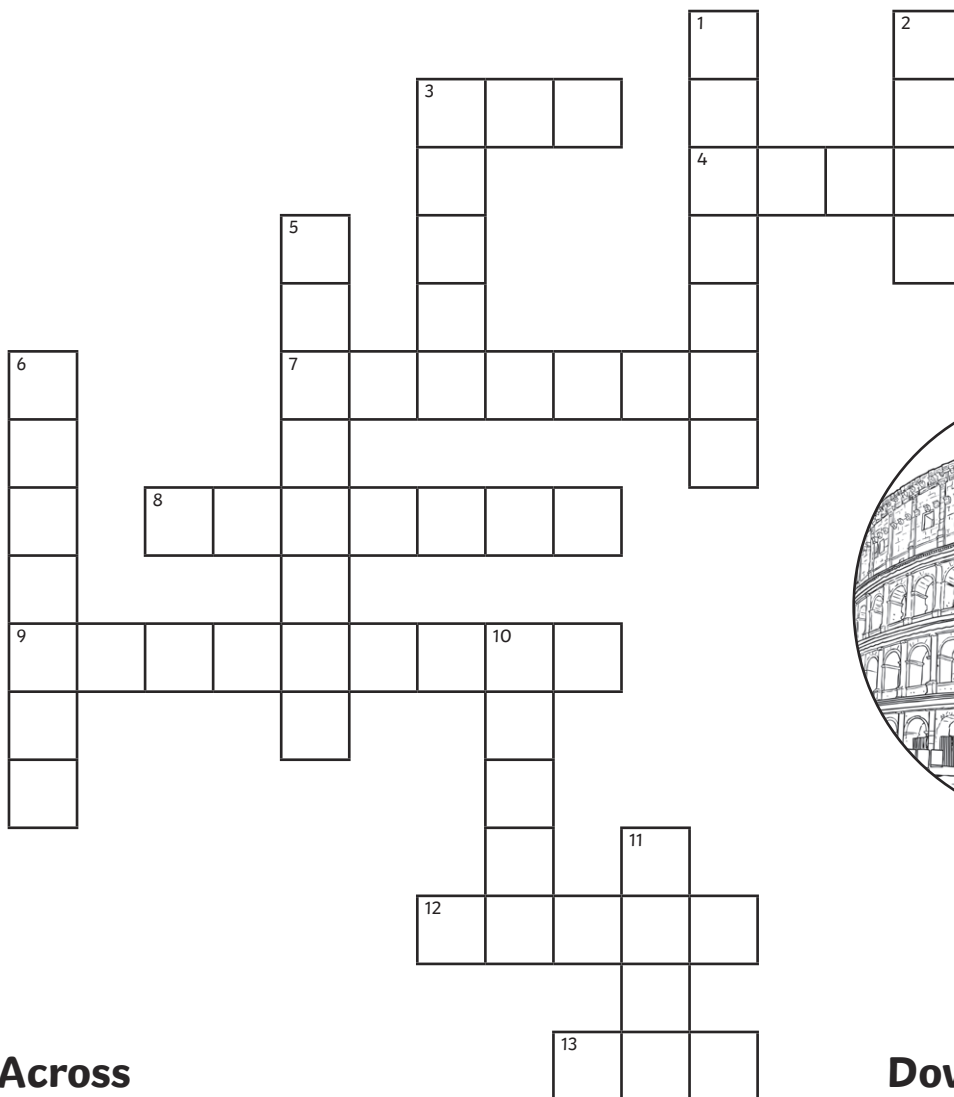
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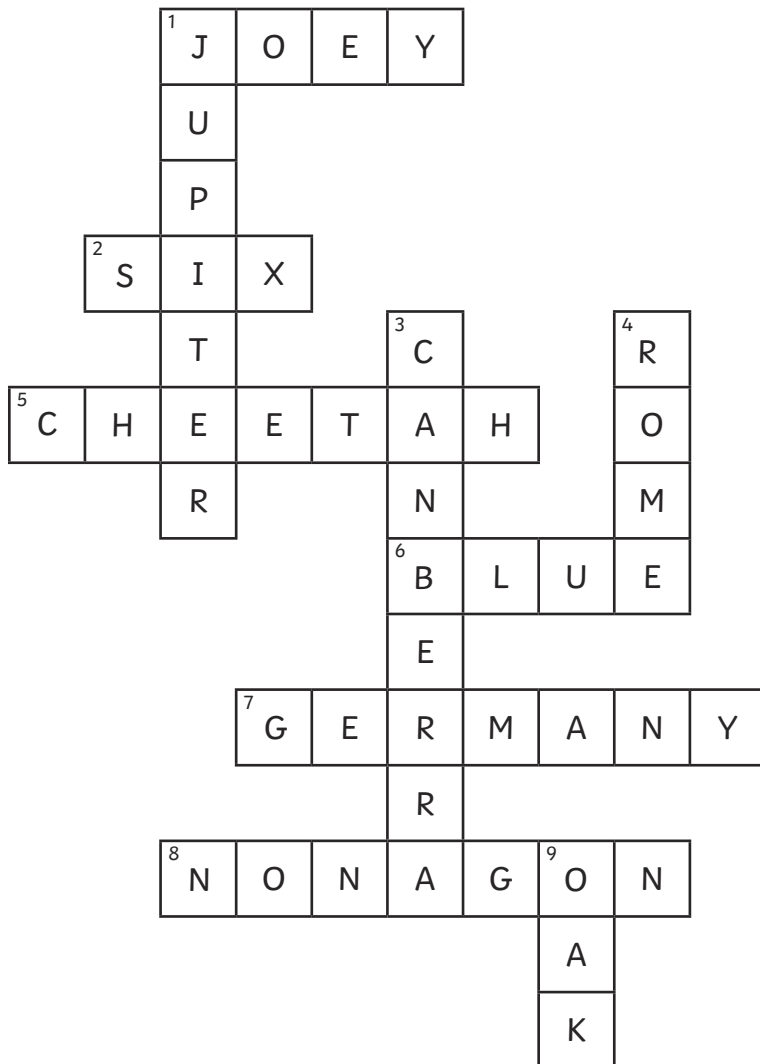
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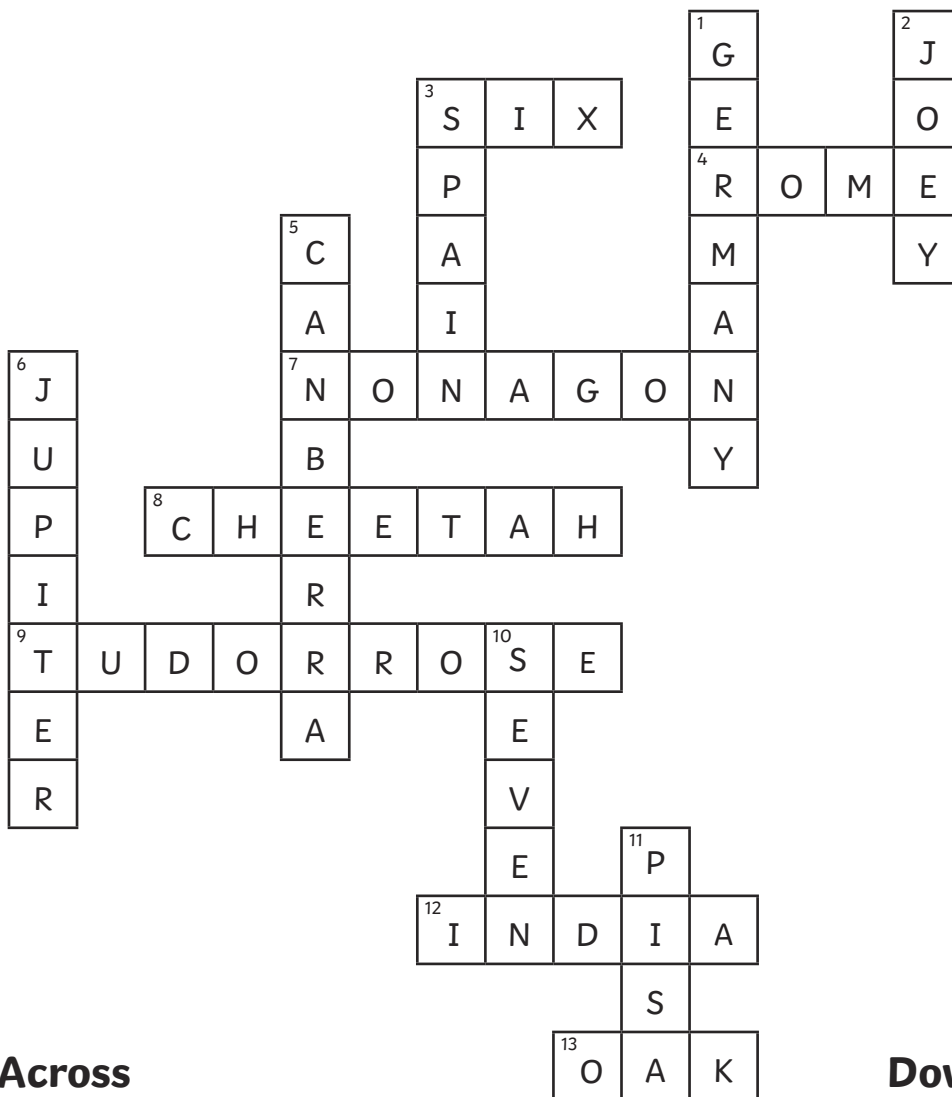
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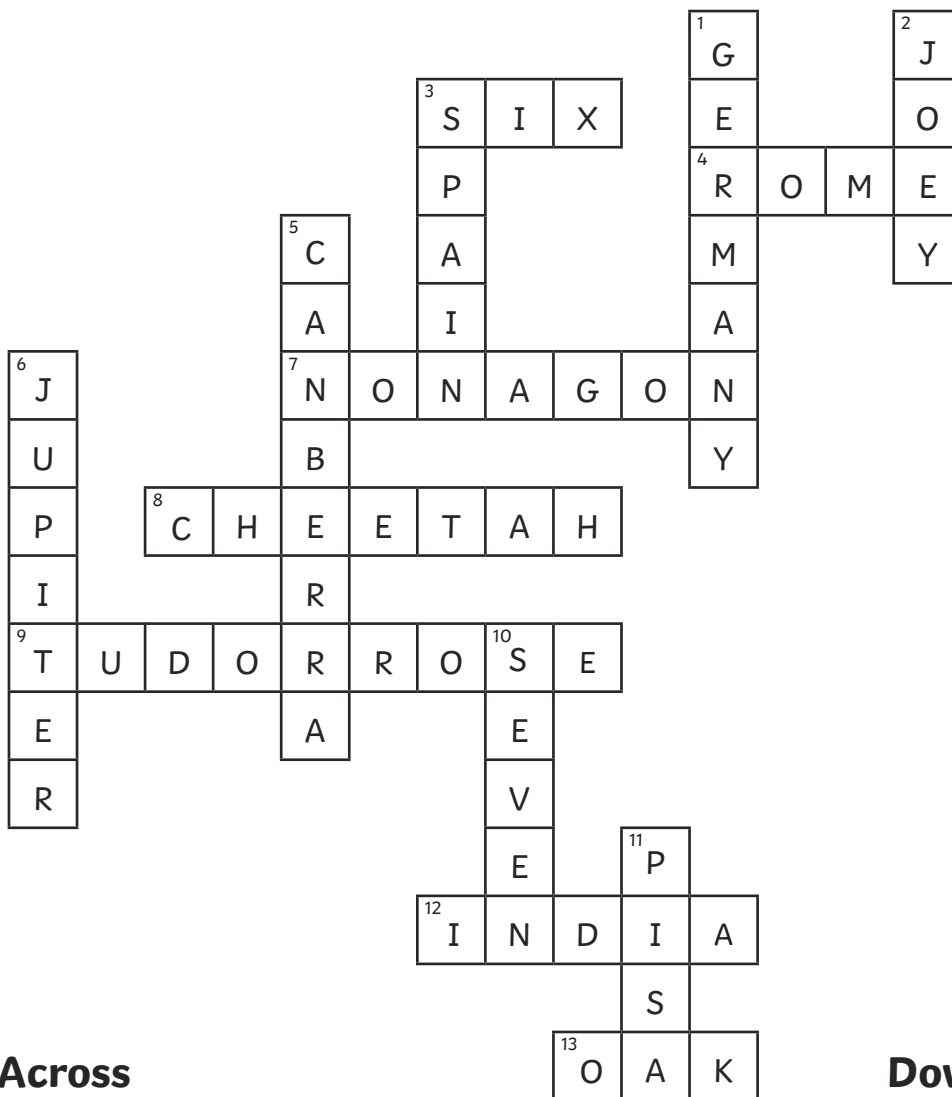
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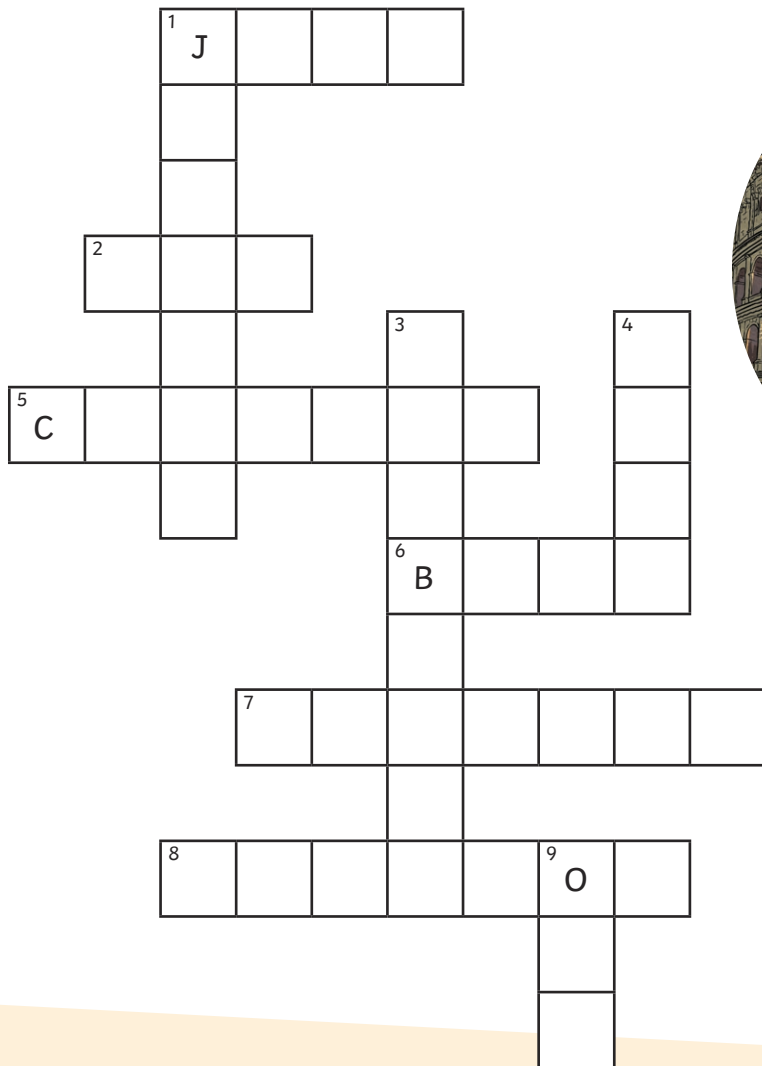
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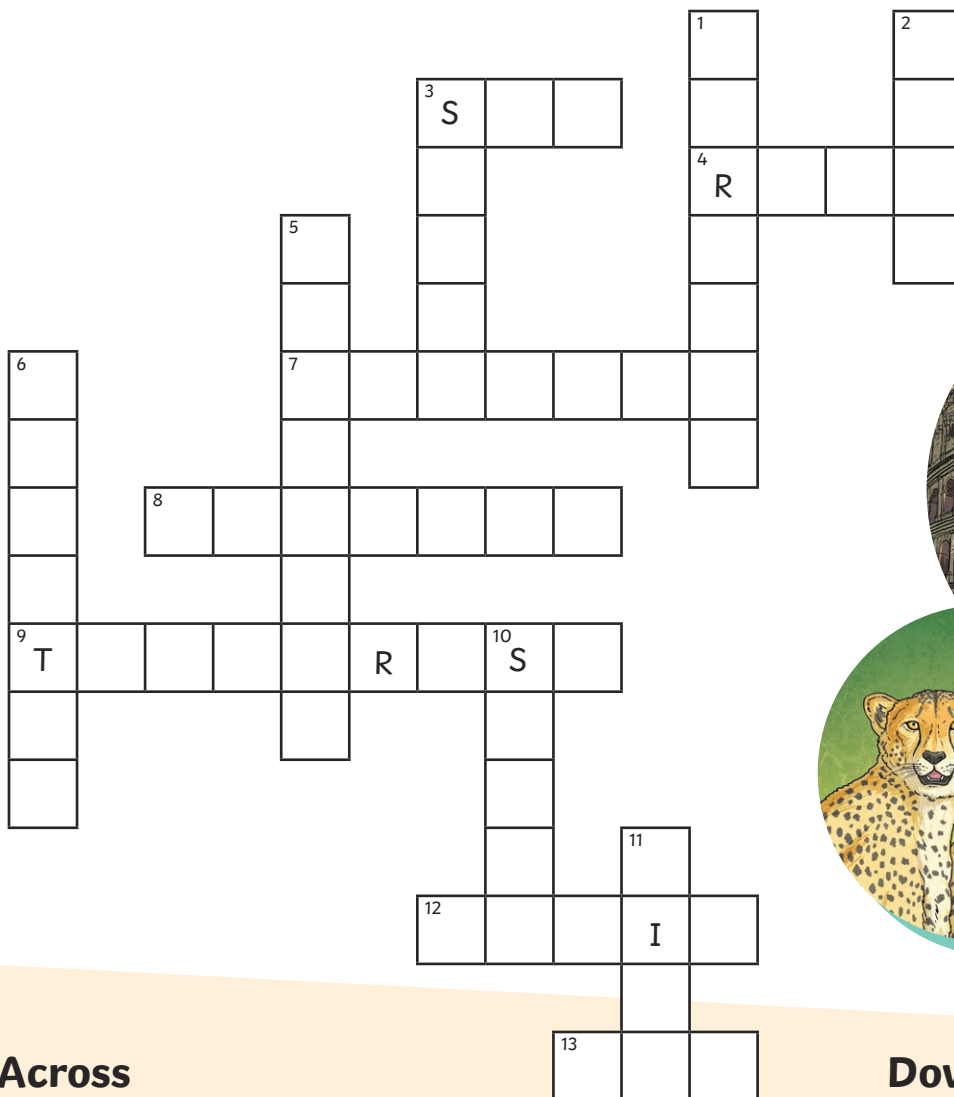
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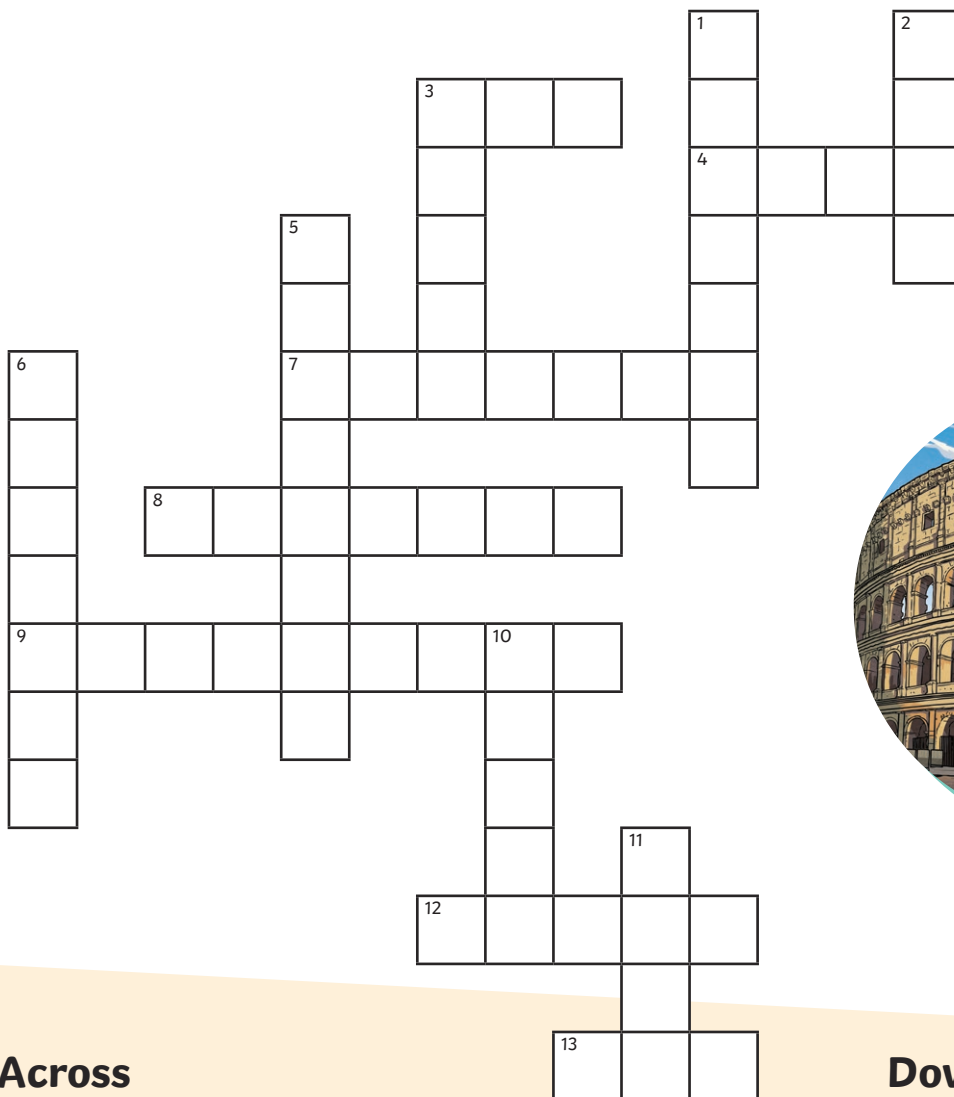
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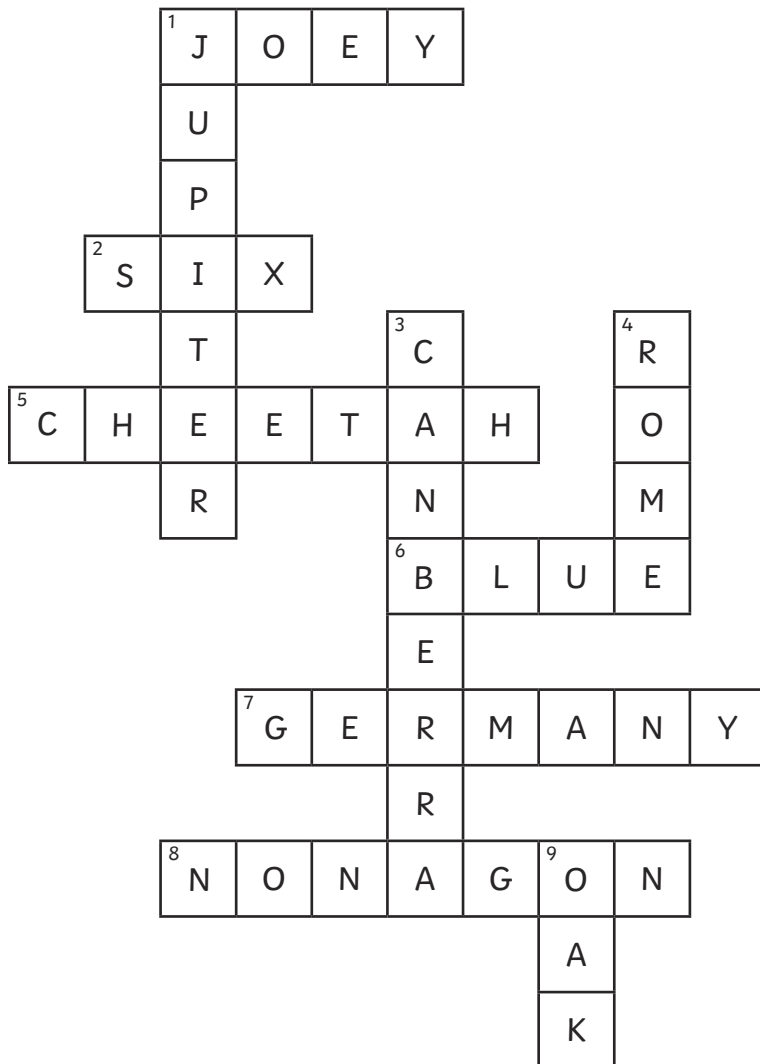
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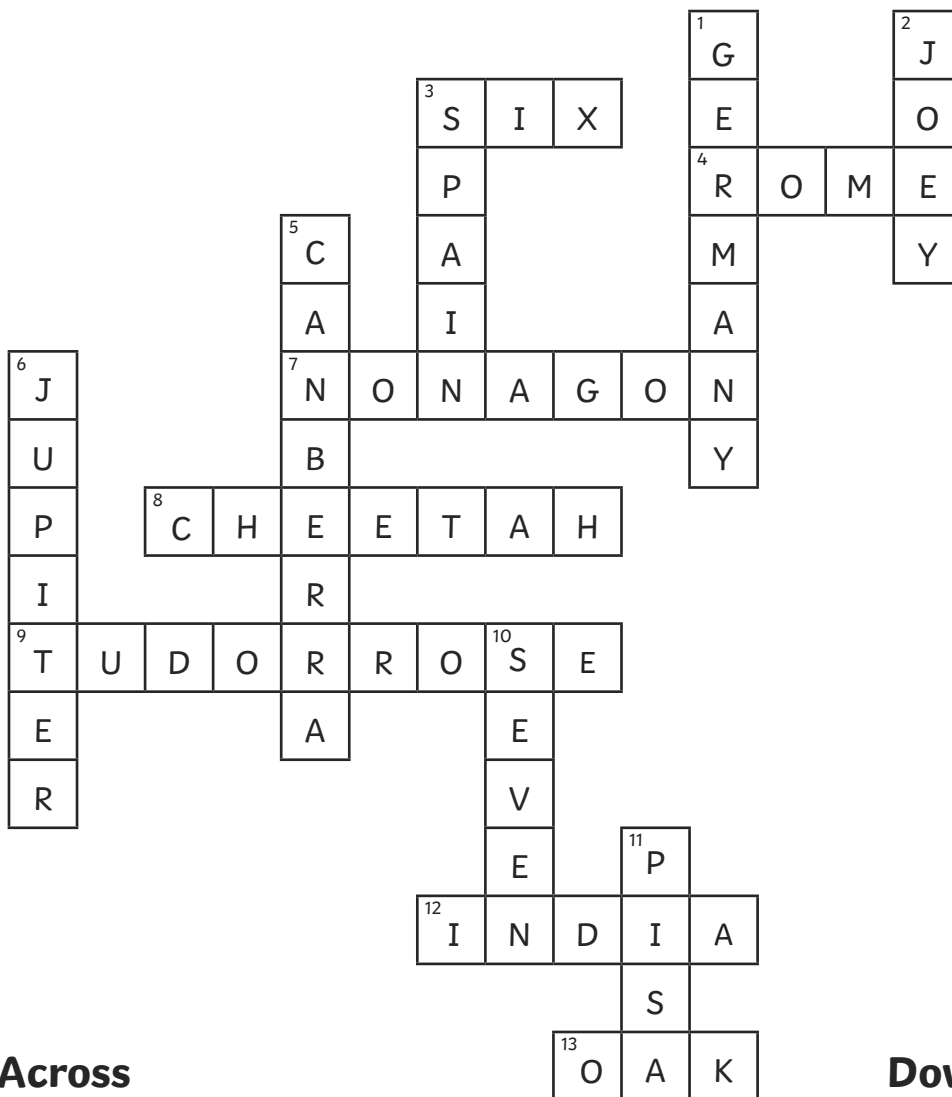
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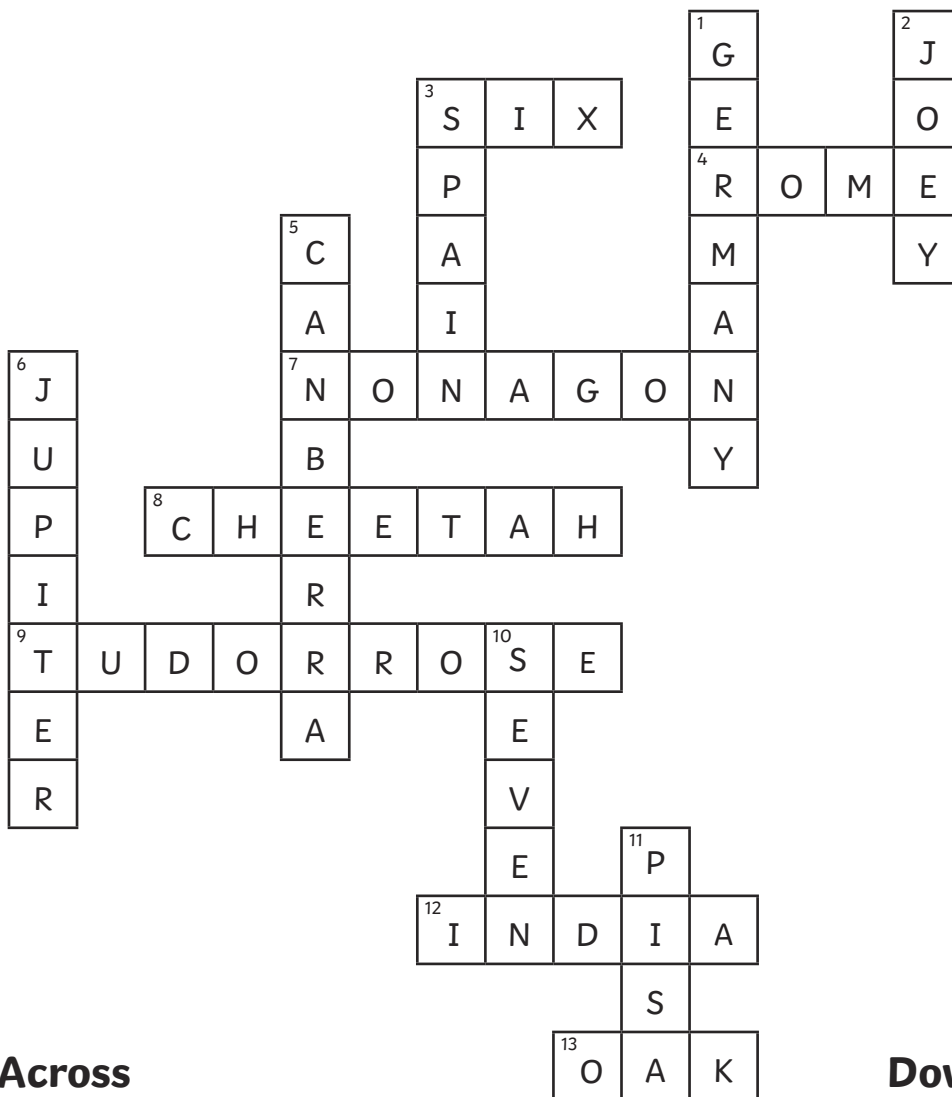
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I can complete a search to find a website or specific information.		













Strategic Searching Online: Refining Searches and Using Boolean Operators

National Curriculum Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.		Lesson Duration It is estimated that this lesson will take approximately 60 minutes.	
Aims To use a search engine effectively by refining the search term. To know how to use Boolean operators to refine a search.			
Success Criteria I can use keywords to refine my search. I can explain how using keywords in my search terms can help when using search engines. I can explain how Boolean operators can affect my search results. I can explain how Boolean operators can be useful when using a search engine.	Key Vocabulary: Boolean operators, search results, search terms, URL, web page, website.		
Resources Lesson Pack PC devices, such as laptops, Chromebooks and/or tablets Highlighters	Preparation _____ one per child Differentiated Image Scavenger Hunt Sheet - one per child Boolean Bingo Boards - one bingo board per child Boolean Bingo Instructions - one per adult Boolean Bingo Counters - six counters per child It is advised that appropriate search engines are chosen prior to the start of the lesson.		

Prior Learning: In the last lesson, children will have briefly looked at the Internet and web browsers. They will have then looked at search engines. The children should have gained an understanding of what to expect in a search result and should have a good understanding of how to conduct a search for information using a search engine.

Learning Sequence

	Remember It: Using the Knowledge Organiser from last lesson, ask the children to go through the words previously underlined as ones that they didn't understand and see if they can now explain them. Ask the children to highlight any words that they are still not sure of.	
 	Refining Searches: Using the skills developed last lesson, ask the children to search for images and information about the town Rugby, using the search term 'Rugby'. Using the Lesson Presentation , discuss with the children why this search term did not produce a desired search result. Discuss how punctuation, such as capital letters for proper nouns, question marks, etc. are not recognised by search engines in the way we use them in our writing. Then demonstrate that adding specific keywords can narrow a search and this reduces the time spent looking at irrelevant web pages. Children could have a go at doing this themselves. Can the children think of any other search terms that would produce the same search results?	
	Refining Searches: Keywords: Using the Lesson Presentation , children to discuss with a partner which keywords would be useful to use when trying to gather information about a given topic. The Lesson Presentation can be altered here to fit any topic of your choice. Then ask the children to discuss what keywords they would use in their search terms to find the given image, or an image similar. Using the questions from the previous Lesson Presentation , can the children find the same answer as last lesson but with less words? This could be used in a competition format on who can do it in the least words.	
	Image Scavenger Hunt: Using the chosen search engine and differentiated Image Scavenger Hunt Activity Sheet , allow children the opportunity to scavenger hunt for images online. This activity can be done independently, as a pair or in a group.	

	 <p>Children to search for the four images using selected keywords. The first keyword is suggested and a word bank is provided but this is not exclusive and children can use their own keywords.</p>	 <p>Children to search for the five images using selected keywords. A word bank is provided but this is not exclusive and children can use their own keywords.</p>	 <p>Children to search for the five images using selected keywords.</p>	
	<p>George Boole: Using the Lesson Presentation, explain to the children briefly where Boolean operators come from and explain the three Boolean operators AND, OR, NOT. Gather the class into a circle. Ask the children to sit down initially but stand up if they say yes to the following statements/questions: if you have a cat AND a sister, if you have a bobble in OR shoes with laces, if you have a pet NOT a dog. The game can go on until you feel the children are comfortable with the three terms. A discussion could be had here as to the difference between the three words and what effect the three words have.</p>			
	<p>Boolean Operators: Using the Lesson Presentation, go through each Boolean operator and how they are used in search engines. Venn diagrams are provided for a visual aid for this explanation. If you would like, https://www.twinkl.co.uk/r/lmvid can be used as another approach to explain Boolean operators. It is important to mention to the children that NOT isn't recognised in some search engines, instead a hyphen (-) is used in place of NOT. Also reiterate that there is no space after the hyphen. A demonstration of the three Boolean operators on a search engine is encouraged or children can have a go for themselves.</p>			
	<p>Using Boolean Operators: Using the Lesson Presentation, show the children how each Boolean operator can affect a search. The demonstrated search results relate to the previous Venn diagrams but these can be altered to fit the class. It is important to remind the children that search terms can be seen in bold under the web page name. Can the children spot any difference between the search results using the AND operator and the OR operator? Using the Lesson Presentation, demonstrate to children how the NOT operator can affect the search result. Remind the children that some search engines use a hyphen (-) rather than NOT. Can the children think why Boolean operators are a useful tool when using a search engine?</p>			
	<p>Boolean Bingo: The Rules: Using the Lesson Presentation and Boolean Bingo Instructions explain to the children the rules of 'Boolean Bingo'. This activity can be done as a whole class or in small groups but an adult is recommended to lead as bingo caller.</p>			

Exploreit

Tryit: Children explore using Boolean operators in a search engine, they could note both the search result and the search result number changes as they use all of the operators. Children could use _____ to aid with their searching.

Playit: Children play the _____ to gain a further understanding of the Boolean operators. The game is great for logical thinking and could be done as part of a competition. The game also offers clues and hints to aid with differentiation.

Assessment Notes:

Disclaimers

This unit involves children searching on the Internet. Please be mindful of search terms/topics used and connotations that could result in inappropriate links and pages. Child-friendly search engines are advised. Ensure your firewall settings are set at the appropriate levels necessary and your anti-virus software is up to date. It is good practice to ensure screen content can be seen at all times and that children know what to do if they see something on the Internet that makes them feel uncomfortable.

We hope you find the information on our website and resources useful. This resource contains links to external websites and/or external apps. Please be aware that the inclusion of any link in this resource should not be taken as an endorsement of any kind by Twinkl of the linked website and/or app, or any association with its operators. You should also be aware that we have no control over the availability of the linked pages and/or apps. If the link is not working, please let us know by contacting TwinklCares and we will try to fix it although we can assume no responsibility if this is the case. We are not responsible for the content of external sites and/or external apps.

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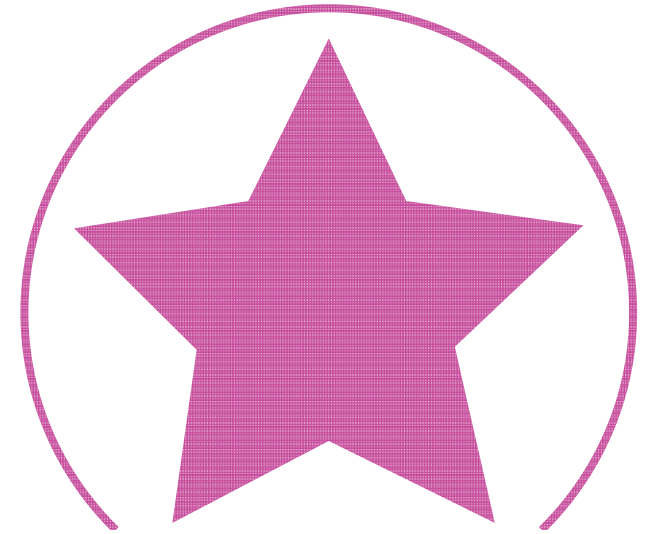
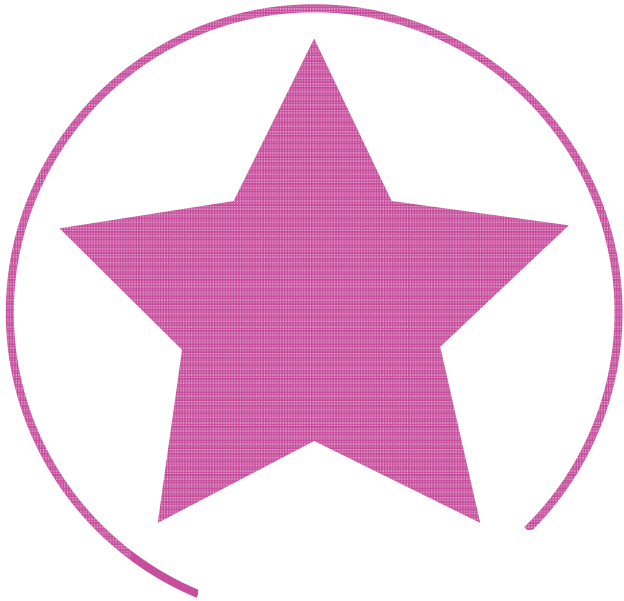












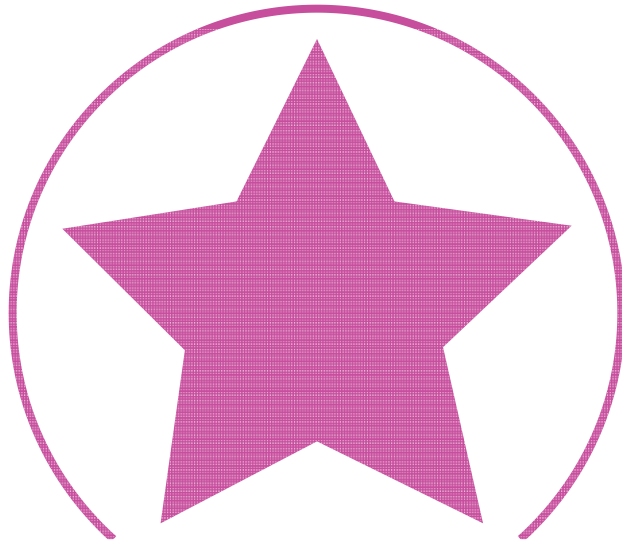




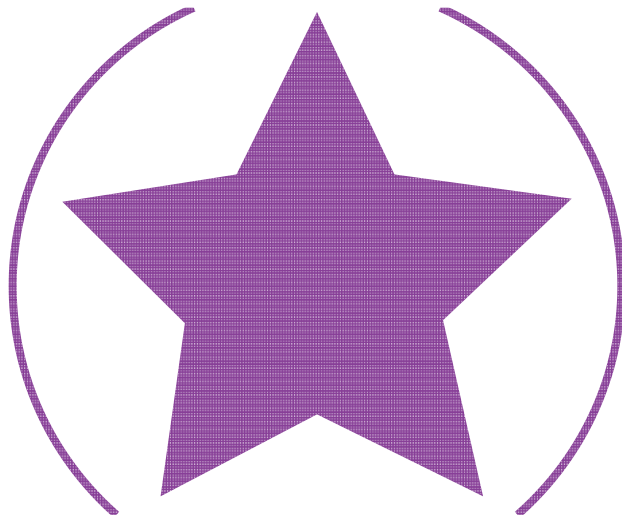




















Boolean Bingo Instructions

To know how to use Boolean operators to refine a search.



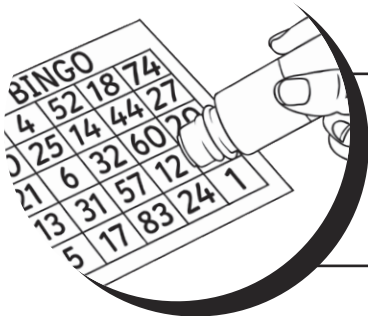
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Setting up: Give each player a unique bingo board and either a set of counters, a whiteboard pen or a pencil.

Playing the game: Including the three Boolean operators, an adult will call out a set of conditions involving numbers and/or colours. For example: An even number NOT ending in 2 or a red number AND a multiple of 3. Use a mixture of number conditions and colours. The bingo boards contain the numbers 1 - 20 and the colours red, blue and yellow. As a way to differentiate, the conditions can be made more mathematically challenging.

Players must look for a number and/or colour on their bingo board that matches the terms read out. If there is a match, the player covers this box on their board using a coloured counter or crosses it off with a pen. If there is more than one number that fits the conditions made by the Boolean Bingo Caller, the player must choose just one number to cross off. The first person to cover the entire board shouts BINGO! and then reads out their numbers to check that they are the winner.

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Optional: The game can be played similar to traditional bingo with a line being called first and then shout BINGO! as the whole board is filled.

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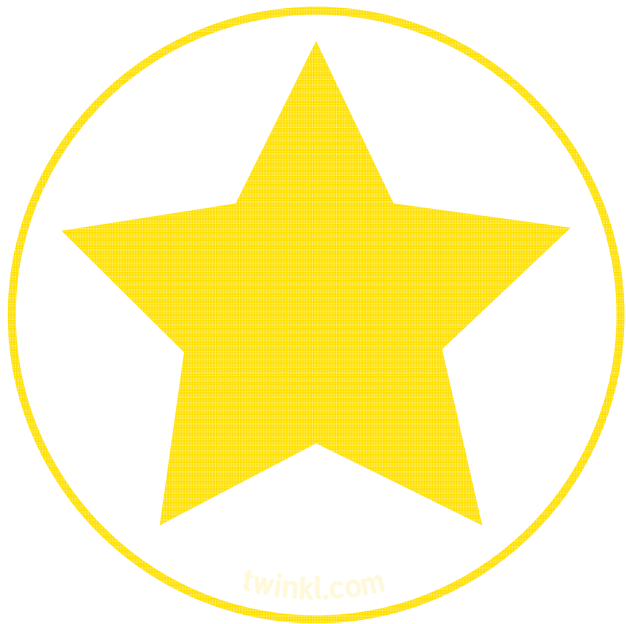
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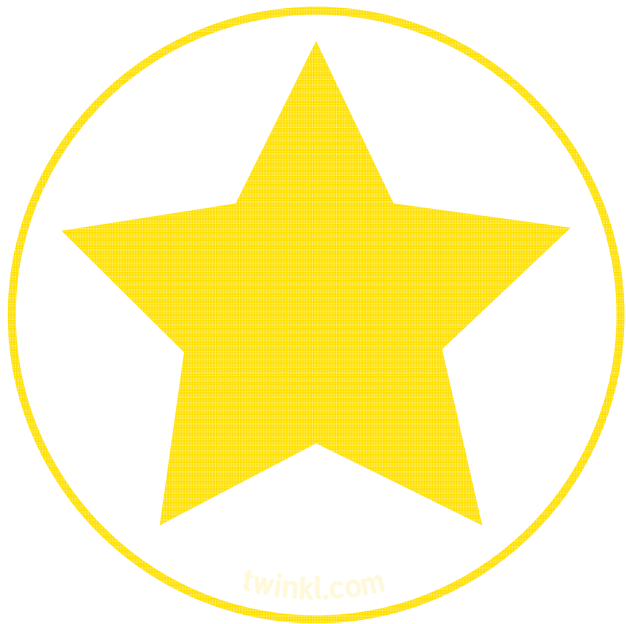












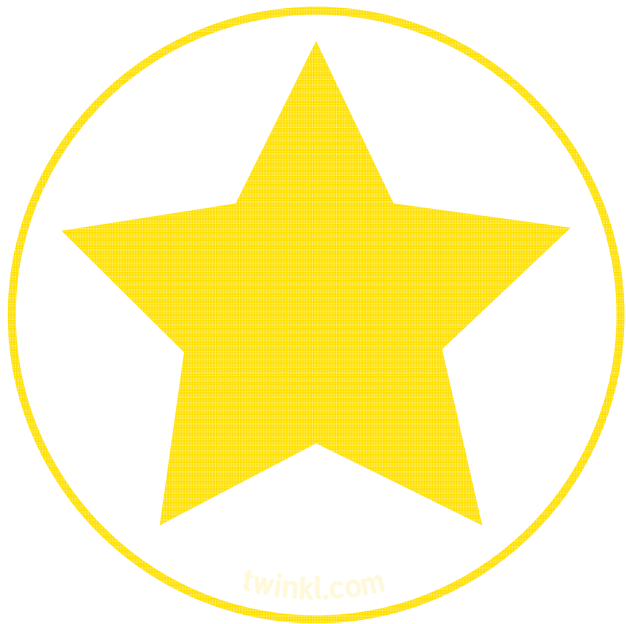












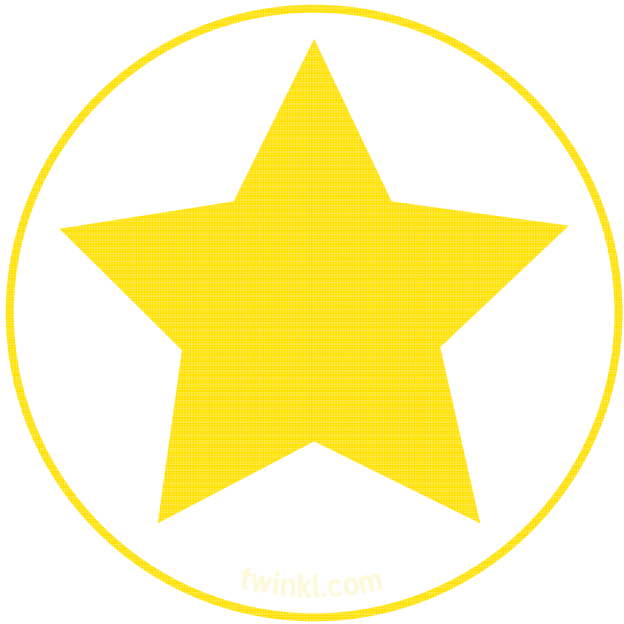
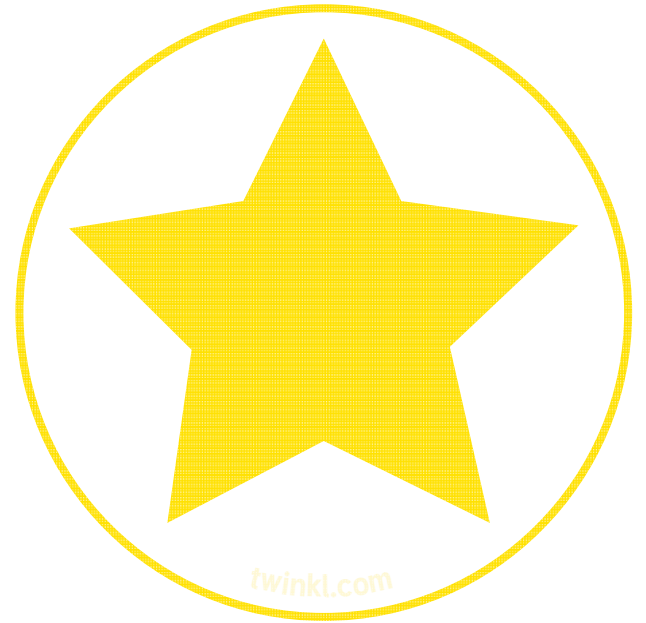
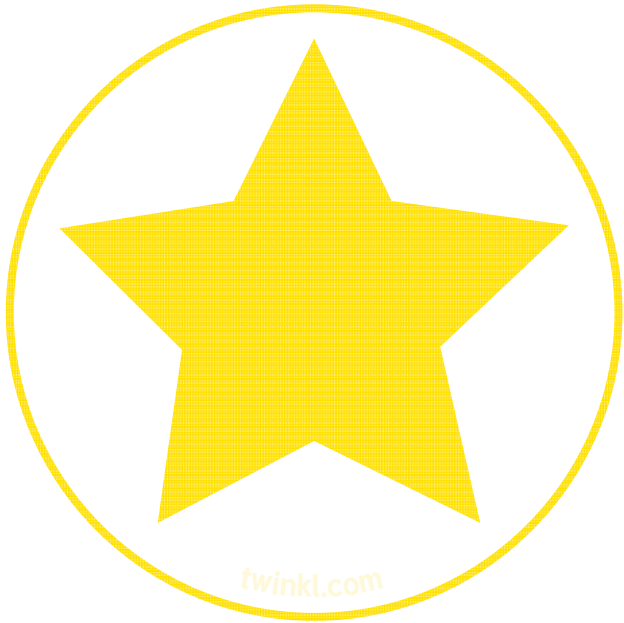












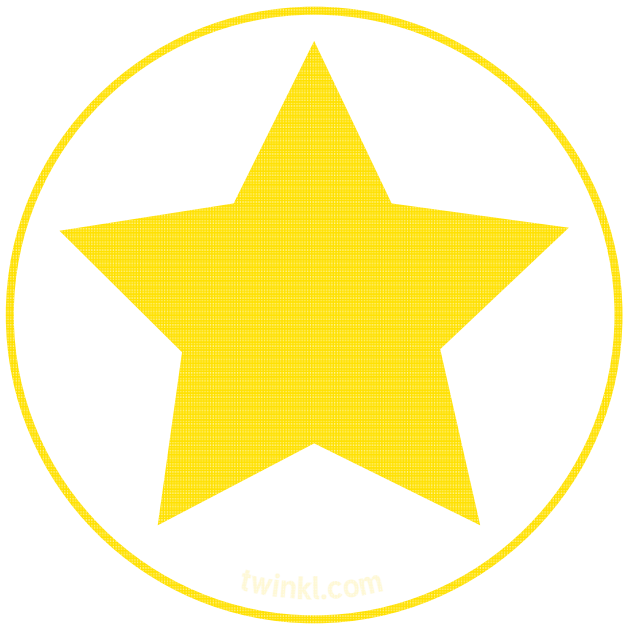
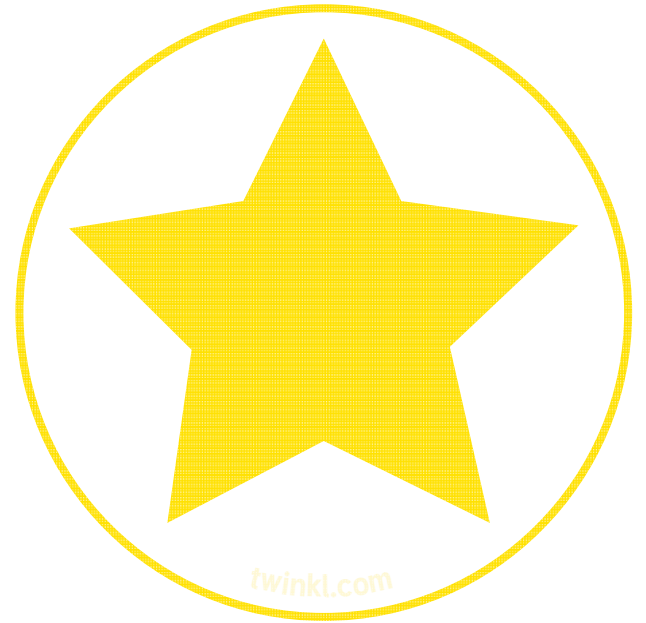
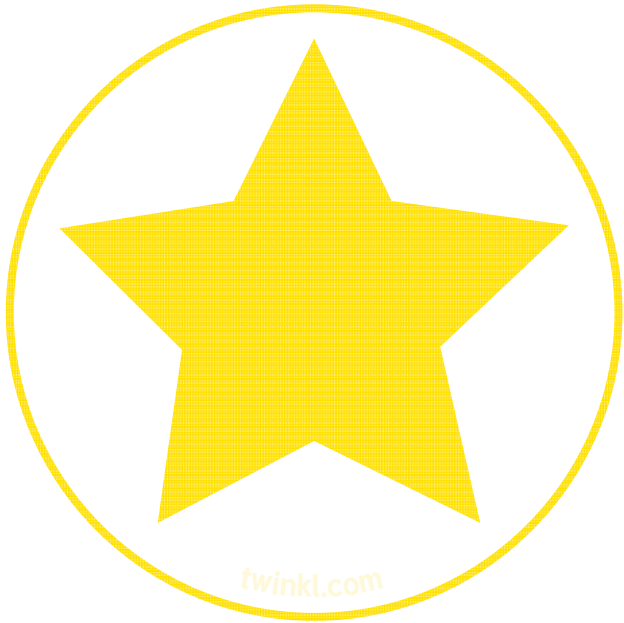


















































































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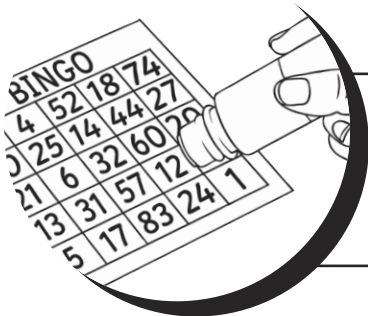
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Image Scavenger Hunt


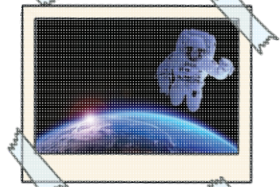
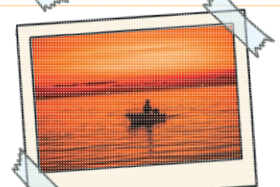
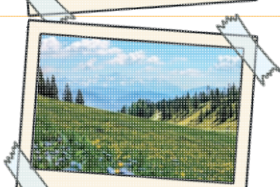
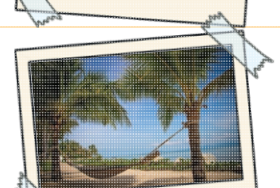
To use a search engine effectively by refining the search term.



Using a search engine, can you find these images or ones similar? Think about the keywords needed in your search terms.

The first keyword has already been included. Use the word bank below for other words that could be included in your search terms.



Image to Find	Keywords Used in Search Term
	tiger
	astronaut
	sunset
	field
	hammock

Word Bank

palm tree man water trees
space mountains beach yellow
flowers snow cub coconut
boat Earth forest



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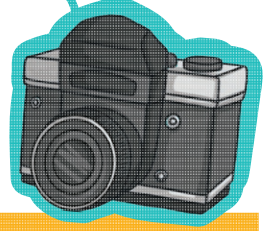

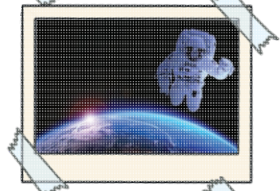
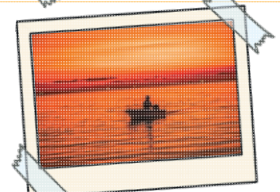
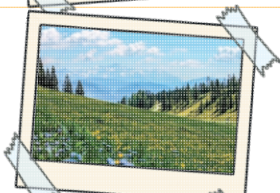
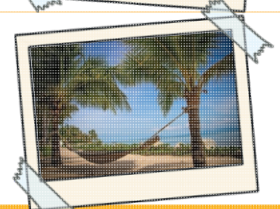


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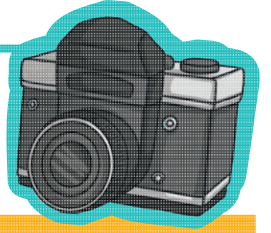



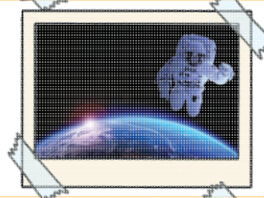
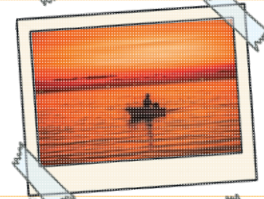


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To use a search engine effectively by refining the search term.



Using a search engine, can you find these images or ones similar? Think about the keywords needed in your search terms. Use the word bank below for other words that could be included in your search terms.



Image to Find	Keywords Used in Search Term
	
	
	
	
	

Word Bank

palm tree man water trees
space mountains beach yellow
flowers snow cub coconut
boat Earth forest








Image Scavenger Hunt

To use a search engine effectively by refining the search term.




Using a search engine, can you find these images or ones similar? Think about the keywords needed in your search terms.



Image to Find	Keywords Used in Search Term
	
	
	
	
	




























Strategic Searching Online: Trusted Pages

National Curriculum Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.		Lesson Duration It is estimated that this lesson will take approximately 60 minutes.	
Aim To identify what makes a website reliable and trustworthy.			
Success Criteria I can explain that just because information is online doesn't mean it is true. I can identify what makes a trusted web page. I can identify why trusted websites are important.	Key Vocabulary: Domain name, protocol, reliability, scheme, second-level domain, secure, subdomain, top-level domain, trustworthy, URL.		
Resources Lesson Pack Two different coloured pencils, pens or highlighters Whiteboards and pens	Preparation Knowledge Organiser - one per child Trusted Web Pages Discussion Cards - one per group (as required) Differentiated Trusted Web Pages Activity Sheet - one per child Access to Internet Tips: Understanding URLs video clip		

Prior Learning: In the last lesson, children will have looked at how to use a search engine effectively. They should feel confident using a search engine to get their desired search results. They should also be very familiar with how a search engine looks.

Learning Sequence

	Remember It: Using the Knowledge Organiser , ask the children to go through the words previously underlined as ones that they didn't understand and see if they can now explain them. Ask the children to highlight any words that they are still unsure of that were mentioned in the last lesson. Using the Lesson Presentation , ask the children to note down on a whiteboard what they can remember about refining search terms. They will be given a 60 second timer. It is recommended that children are given a short time for thinking before setting the timer. Then ask the children what they remember about URLs.	
	The Big Question: Using the Lesson Presentation , ask the children if they can believe everything they read or see online. Make a note of what the children say and any reasons they offer.	
	Trusted Web Pages: Using the Lesson Presentation , discuss with the children how often the search engine Google is used along with how many websites there are on the World Wide Web. Explain to the children that, although there are a lot of websites, there are clues for us to use to decide if a website is reliable and trustworthy.	
	Understanding URLs: Using the Lesson Presentation and Internet Tips: Understanding URLs video clip, explain and discuss the components of a URL.	
	URL: Scheme: Using the Lesson Presentation , explain the first part of a website's URL. It would be beneficial to show the children where a URL is and show the children how to see the scheme of a website URL. Explain to the children that https means that a website is secure. Can the children think of websites that would use a secure protocol scheme to make their website secure?	
	URL: Domain Components: Using the Lesson Presentation , discuss what a domain name is. Explain to the children that the domain name is the main part of a URL. The Lesson Presentation uses www.twinkl.co.uk as an example domain name and breaks it up into the three parts, explaining the meaning of each part.	
	Domain Name: Top-Level Domain: Using the Lesson Presentation , explain to the children the different top-level domains and their meanings. The Lesson Presentation explains some of the most common top-level domains, including some country specific.	
	Using the Domain Name: Using the Lesson Presentation , go through three different website URLs (a mixture of real and fake). The Lesson Presentation provides the children with an opportunity to use what they have just learnt to discuss how trustworthy these websites are. It is suggested that children work in pairs or small groups to discuss initially.	

	<p>Trusted Web Pages: Using the differentiated Trusted Web Pages Activity Sheets, children should use what they have learnt to decide if the website URLs are from trustworthy websites. Using a mixture of real and fake URLs, children look at the different components of the URL to decide. They are not required to go onto the website, this is an unplugged activity.</p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="215 241 598 353">  Children decide if the four URLs provided are trustworthy, explaining their reasoning. </div> <div data-bbox="614 241 997 353">  Children decide if the five URLs provided are trustworthy, explaining their reasoning. </div> <div data-bbox="1013 241 1396 443">  Children decide if the six URLs provided are trustworthy, using their knowledge of top-level domains and subdomains. They should explain their reasoning. </div> </div>	
	<p>Trusted Web Pages: Using the Lesson Presentation, show the children examples of two websites. The websites have a similar purpose but look completely different. Ask the children to evaluate the website to decide which one they think will provide the most reliable information. It is important to mention that the look of a website is not always a good indicator of the reliability of a website but can be used as an initial indicator. Ask the children to come up with suggestions for what they look for in a website to check if its information is reliable.</p> <p>Can the children identify what makes a website trustworthy?</p> <p>Using the Trusted Web Pages Discussion Cards, ask the children to discuss the statements with their talk partner. The statements provide a good indicator of children's understanding of what makes a reliable website.</p>	
	<p>Web Page Reliability: Using the Lesson Presentation, ask the children to come up with their 'Web Page Reliability Golden Rules'. Some examples are provided, these can be altered or deleted prior to the lesson if required.</p>	

Explore it

Research it: Children could be given an animal or they could choose their own to research. They must create three statements about the animal and note down the website URLs they found the information on. The children must confirm each fact by finding two or three websites that state the same fact. They must then change one statement so that it becomes a lie. Swap statements with a partner and the partner must try to discover which statement is a lie using the website URLs provided.

Explain it: Children create a poster to display 'Web Page Reliability Golden Rules' to inform younger children within the school. The poster could be done on paper or on an application on a device.

Assessment Notes:

Disclaimers:

This unit involves children searching on the Internet. Please be mindful of search terms/topics used and connotations that could result in inappropriate links and pages. Child friendly search engines are advised. Ensure your firewall settings are set at the appropriate levels necessary and your anti-virus software is up to date. It is good practice to ensure screen content can be seen at all times and that children know what to do if they see something on the Internet that makes them feel uncomfortable.

We hope you find the information on our website and resources useful. This resource contains links to external websites and/or external apps. Please be aware that the inclusion of any link in this resource should not be taken as an endorsement of any kind by Twinkl of the linked website and/or app, or any association with its operators. You should also be aware that we have no control over the availability of the linked pages and/or apps. If the link is not working, please let us know by contacting TwinklCares and we will try to fix it although we can assume no responsibility if this is the case. We are not responsible for the content of external sites and/or external apps.

In addition to this, this resource contains 'fake' website URLs. These URLs should not be attempted to be viewed. These were 'fake' at the time of print. We do not accept responsibility should these websites become live in the future.

This resource contains links to external video websites. These websites often have autoplay features meaning that other videos will play after the video you are watching finishes. You should disable this feature before using the video in any classroom or similar setting. Twinkl assumes no responsibility for the contents of linked websites. The inclusion of any link in this resource should not be taken as an endorsement of any kind by Twinkl of the linked website or any association with its operators. We have no control over the availability of the linked pages. If the link is not working, please let us know by contacting TwinklCares and we will try to fix it, although we can assume no responsibility if this is the case.

Trusted Web Pages

To identify what makes a website reliable and trustworthy.



Which of the following web page's URLs look trustworthy? You do not need to go and visit the web pages, just simply look at the URL.

You must explain your reasons for your decision.



Trusted Web Pages Answers

To identify what makes a website reliable and trustworthy.



The children may have set out their answers in different ways. But they should have noticed the following about the web page URLs:



<https://www.gov.uk/school-term-holiday-dates>

Trustworthy - https means it is secure, government website has accurate information.

Untrustworthy - http indicates the website is unsecure, 'get-free-games' could indicate some form of scam as completely free games are unlikely and the website is asking you to sign up which could also indicate a scam.

Trustworthy - https means secure, BBC is a very trusted source of information.

Untrustworthy - http indicates the website is unsecure, language and spelling used in URL is informal/slang.

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Trusted Web Pages Discussion Cards

To identify what makes a trusted website reliable and trustworthy.



Discuss the following statements below with your talk partner.

The website looks very professional, therefore all of the information must be factual and correct.

There is an email provided on the website, so I should use the email to ask if the information on the website is trustworthy.

The website was written by someone I know. I can trust this website.

The web page is from a government website. The information it offers must be factually accurate.

I have read three websites that state the same fact. I can trust that this fact is accurate.

The website has lots of graphs and information, as a result the information must all be true.

I have been told to go onto this website by a friend. I can trust this website.

The website has a logo on it that I recognise. I should trust this website.

I know a website is safe to use if a trusted adult has recommended it.

Trusted Web Pages Discussion Cards

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Discuss the following statements below with your talk partner.

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Strategic Searching Online | Trusted Pages

To identify what makes a website reliable and trustworthy.		
I can explain that just because information is online doesn't mean it is true.		
I can identify what makes a trusted web page.		
I can identify why trusted websites are important.		

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Strategic Searching Online: How Search Engines Work: Web Crawlers and Web Indexing

National Curriculum Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.		Lesson Duration It is estimated that this lesson will take approximately 60 minutes.
Aim To understand how search engines work.		
Success Criteria I can explain what a web crawler is. I can explain how web indexing works. I can explain how search engines work.	Key Vocabulary: Web crawler, spider, web indexing, index, search engine index, hyperlink.	
Resources Lesson Pack Whiteboard and pens Pens or pencils	Preparation Differentiated Classroom Crawlers Activity Sheet - one per child	

Prior Learning: Throughout this [Lesson Pack](#) children have used search engines and therefore should have a good understanding of what they are and what they are used for. It is important that children understand the difference between a web page and a website.

Learning Sequence

	Remember It: Using the Lesson Presentation , complete the quiz questions. The quiz asks children to decide which keywords would return the most efficient search results. This can be completed as a whole class, pair work or individually, asking the children to write their answers down on a whiteboard.				
	Search Engines: Using the Lesson Presentation , introduce the term index and explain how this relates to search engines. <i>Can the children explain why they think having an index could be useful?</i> Use the Lesson Presentation to introduce the term web crawlers and explain how search engines use them to create their search engine index. <i>Can children explain to a partner, in their own words, what a web crawler is?</i>				
	Web Crawlers: Using the Lesson Presentation , explain what web crawlers are in more depth. Explain to the children what information web crawlers store, including the location of the web page. The Lesson Presentation also explains some of the limitations of a web crawler programme.				
	Classroom Crawlers: Using the differentiated Classroom Crawlers Activity Sheet , children must find the various classroom equipment listed. They must note down all the locations they find the equipment and the total number of each object found. This activity can be done in groups, pairs or independently. It is recommended that the safety of children is taken into account. An editable/blank version of this resource is available to be adapted as required.				
	Children need to index four pieces of classroom equipment, noting the location/s and total found.		Children need to index five pieces of classroom equipment, noting the location/s and total found. The items are less specific so more indexing is required.		Children need to index six pieces of classroom equipment, noting the location/s and total found. The items listed are likely to have multiple locations within the classroom.
	Evaluate: Using the Lesson Presentation , ask the children to discuss the questions provided with someone they didn't work with. Children should discuss the indexing process and relate this to search engines.				

Explore it

Index it: Children could be given the blank differentiated [Classroom Crawlers Activity Sheet](#) and index another area in the school.

Use it: Children could experience using an index. Ask the children to pick up a non-fiction book with an index page. In pairs the children could take turns to use the index page to find a specific word in a book. This could be done as part of a game.

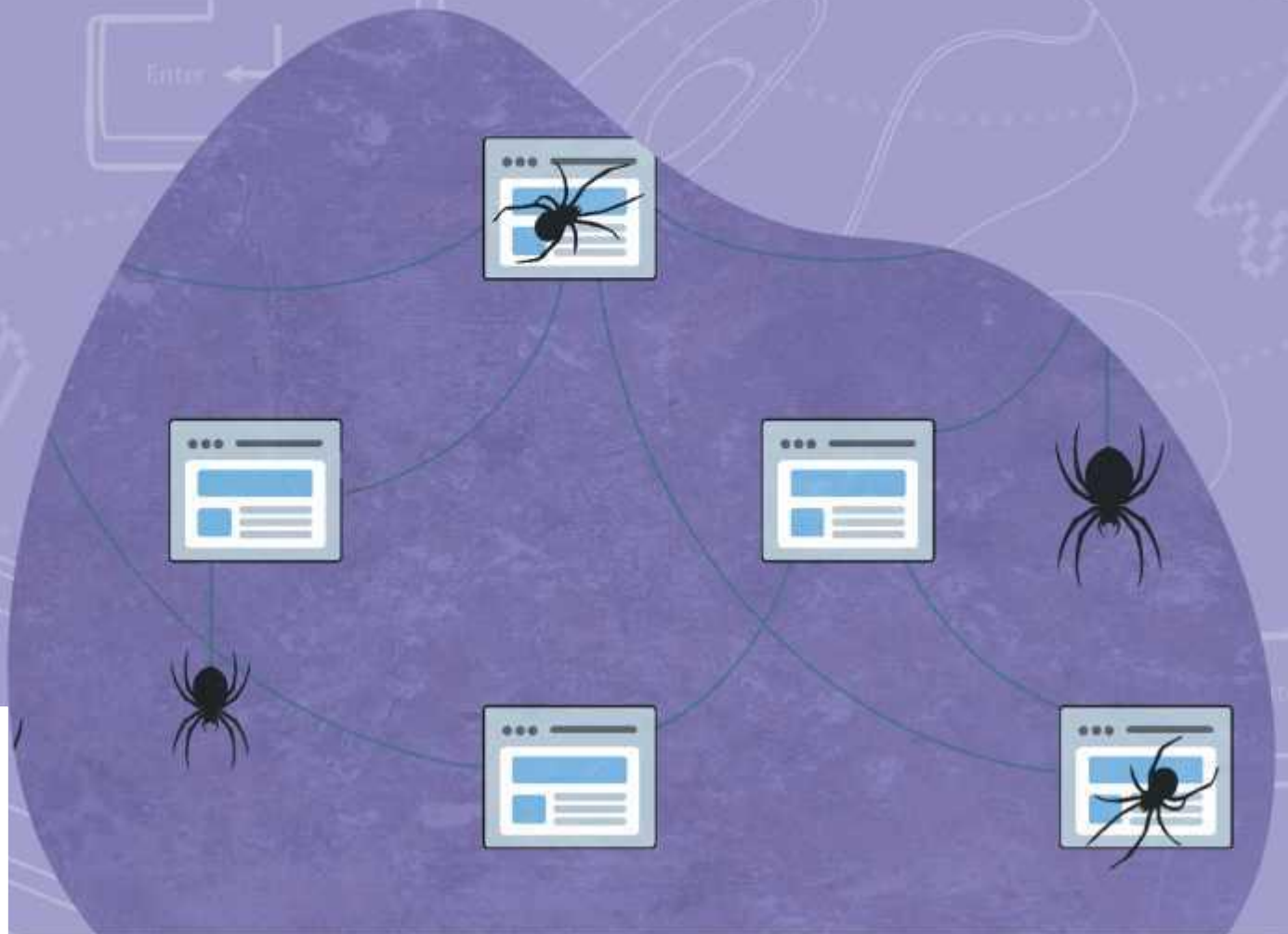
Assessment Notes:



Computing

Strategic Searching Online

How Search Engines Work: Web Crawlers and Web Indexing



Question Marks

You will spot question marks at certain points in this **Lesson Presentation**.

Clicking the question marks will bring up key questions.



The assessment questions that appear will enable you to check your understanding against the lesson aim and success criteria.

Aim

- To understand how search engines work.

Success Criteria

- I can explain what a web crawler is.
- I can explain how web indexing works.
- I can explain how search engines work.

Remember It

Thinking about all you have learnt about search engines, can you complete the following quiz?

Research questions will be displayed at the top of the screen. You must decide, from the multiple choice answers, which keywords would return the most efficient search results.



Remember It

What is the fastest animal on land?

a) fastest animal

Not quite. Have another try.

b) the fastest animal on land

Not quite. Have another try.

c) fastest animal land

Well done! That's correct!

When using a search engine, your search terms need to be specific to your desired search results. Remember, you only need to include keywords in your search terms.

Remember It

How many flightless species of birds are there?

a) bird AND flightless

Well done! That's correct!

When using the Boolean operator AND, all searches that include both keywords are included in the search results.

b) bird OR flightless

Not quite. Have another try.

c) bird -flightless

Not quite. Have another try.

Remember It

What are the names of some UK cities, not including London?

a) UK cities

Not quite. Have another try.

b) uk cities -london

Well done! That's correct!

When using the Boolean operator NOT (-) searches that include the keywords UK and not London will be included in the search results. Remember, search engines do not recognise capital letters for proper nouns.

c) UK cities but not London

Not quite. Have another try.

Search Engines

The Internet is made up of nearly 2 billion websites. Thanks to search engines, these websites can be easily accessed through our inputted search terms. This is done through a program called 'web crawler' or 'spider'.



But how does this work?

When we input our search terms, a search engine will scan its **index** of web pages to find results that relate to your search terms.

An index is used to categorise items. They can be found in lots of different places, such as at the back of a non-fiction book and in a library. An index can help us find specific items that we are searching for by providing their location.

X

Why do you think having an index can be useful?



Search Engines

How does indexing work on the Internet?

A search engine makes its own index through a program called spider or web crawler.

A spider or web crawler is programmed to crawl through the World Wide Web. They visit web pages through hyperlinks and store information about each page they visit.

When the spider or web crawler stores information about a web page, it is creating an index of these web pages. This information is then all put together and stored. The web crawler program takes a copy of the web pages they visit and its location on the World Wide Web. These are then stored on the search engine's servers and becomes the search engine's index.

When a web page appears in your search results, this means a spider or web crawler has visited it and is recommending it based on the information it has collected from the web page. Another part of the web crawler or 'spider' program is to decide whether or not the web pages are good enough to deliver search results.

X

What is a web crawler? In your own words, explain it to a partner.



Web Crawlers

The spiders or web crawlers look at a web page more than once. This means that if a web page gets an update, the search engine index has the newest copy stored.

The web crawlers look at all of the information on a website, such as:

keywords

images

website name

hyperlinks

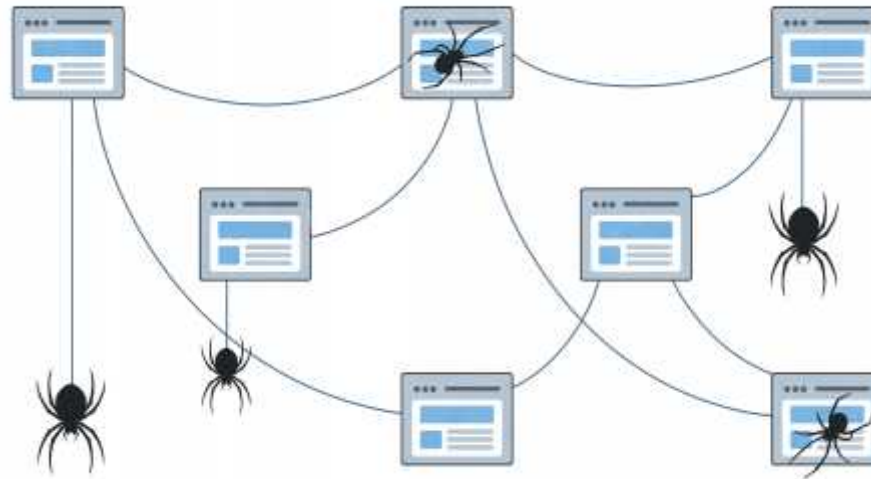
headings and
sub-headings

web page titles

Web Crawlers

Each search engine has its own web crawler program. This means that each search engine has a different search index.

When the web crawler program crawls through web pages, they are looking for hyperlinks on each web page. The hyperlinks are stored on a robots.txt file. This file is created by the web page developer and cannot be seen when viewing the website.



Web Crawlers

Sometimes a website may not show up anywhere in search results, this could be because:

- the web page is new and hasn't been crawled yet.
- the web page has no hyperlinks to it from other web pages.
- the web page is too difficult to navigate around for the web crawlers.
- the website contains some code called 'crawler directives' that is blocking it from the search engine.
- the web crawlers have detected some scam software.



Classroom Crawlers

You are now going to crawl the classroom, just like a web crawler. You have been given a list of equipment you would find in the classroom. On the sheet, note down the locations and the total number found for each item.

Top Tip: Sometimes equipment is not always put back in the correct place. Make sure you look really carefully around the classroom.



The worksheet is titled "Classroom Crawlers" and includes a URL "http://www.regentstudies.com". It features a table with three columns: "Object", "Location/s", and "Total Number Found". The table has four rows, with the first row containing the text "pencil", the second "yellow rubbering pencil", the third "marker", and the fourth "marker cap". At the bottom of the worksheet, there is an illustration of a person holding a globe.

Object	Location/s	Total Number Found
pencil		
yellow rubbering pencil		
marker		
marker cap		

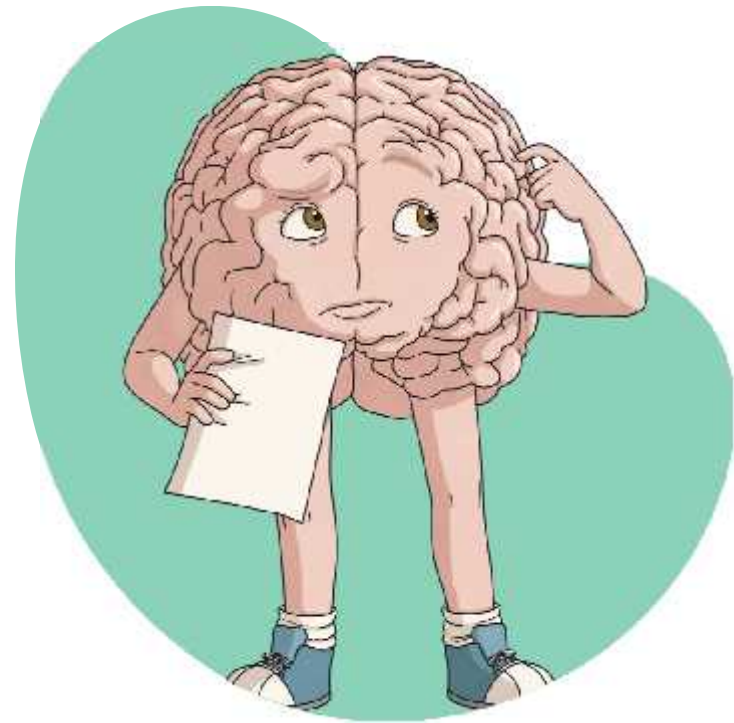
Evaluate

What problems did you encounter?

Do you think web crawlers would also face a similar problem?

Did you create a method for 'crawling' the classroom?

Check with someone you didn't work with. Did you both find the equipment in the same places?

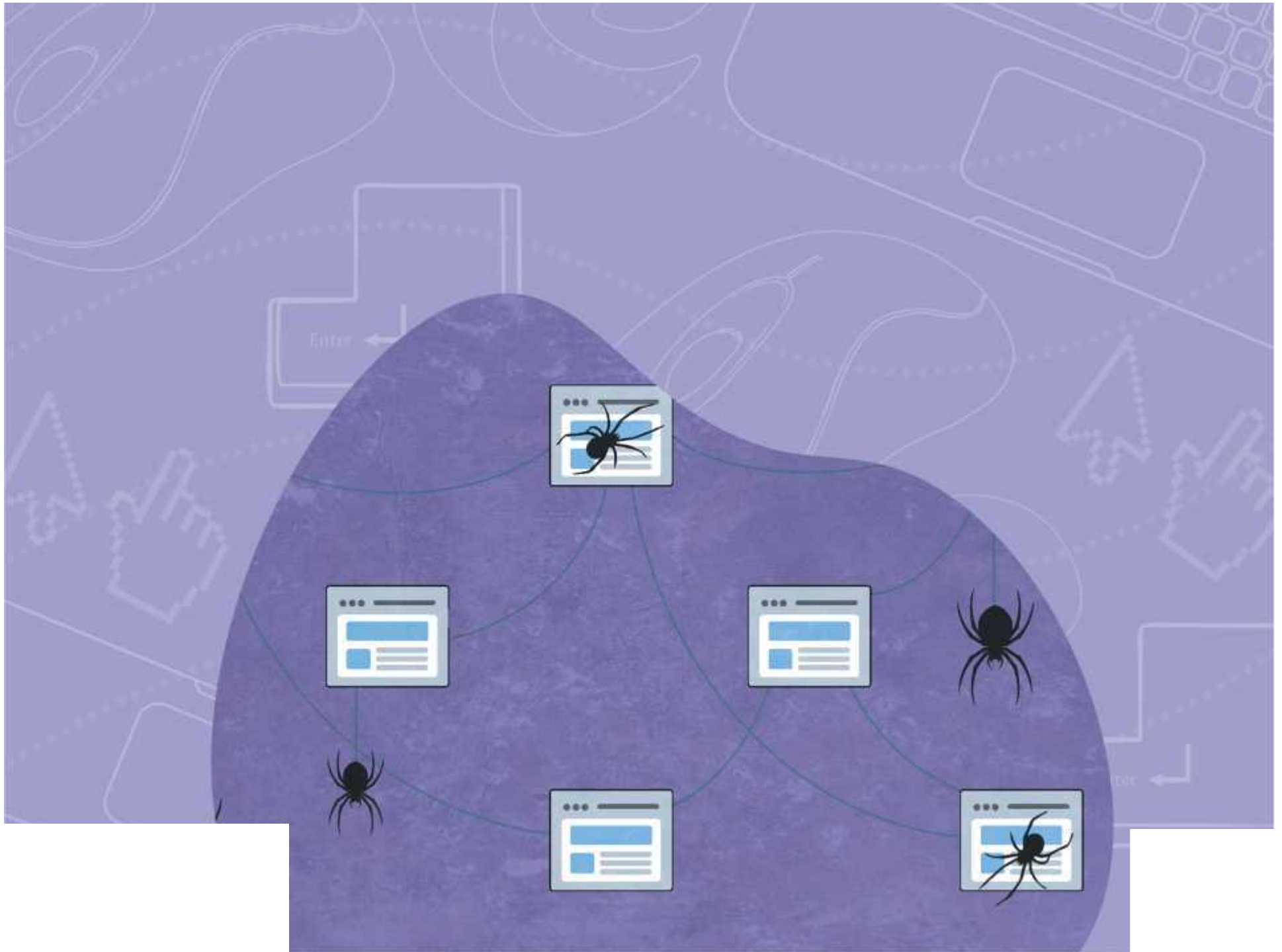


Aim

- To understand how search engines work.

Success Criteria

- I can explain what a web crawler is.
- I can explain how web indexing works.
- I can explain how search engines work.



Classroom Crawlers

To understand how search engines work.



Object	Location/s	Total Number Found
pencil		
yellow colouring pencil		
mirror		
teacher pen		



Classroom Crawlers

To understand how search engines work.



Object	Location/s	Total Number Found
pencil		
pen		
ruler		
glue stick		
whiteboard		



Classroom Crawlers

To understand how search engines work.



Object	Location/s	Total Number Found
pencil		
pen		
ruler		
glue stick		
whiteboard		
paper		



Classroom Crawlers

To understand how search engines work.



Object	Location/s	Total Number Found
pencil		
yellow colouring pencil		
mirror		
teacher pen		



Classroom Crawlers

To understand how search engines work.



Object	Location/s	Total Number Found
pencil		
pen		
ruler		
glue stick		
whiteboard		



Classroom Crawlers

To understand how search engines work.



Object	Location/s	Total Number Found
pencil		
pen		
ruler		
glue stick		
whiteboard		
paper		



Classroom Crawlers

To understand how search engines work.



Object	Location/s	Total Number Found

Classroom Crawlers

To understand how search engines work.



Object	Location/s	Total Number Found
pencil		
yellow colouring pencil		
mirror		
teacher pen		



Classroom Crawlers

To understand how search engines work.



Object	Location/s	Total Number Found
pencil		
pen		
ruler		
glue stick		
whiteboard		



Classroom Crawlers

To understand how search engines work.



Object	Location/s	Total Number Found
pencil		
pen		
ruler		
glue stick		
whiteboard		
paper		



Classroom Crawlers

To understand how search engines work.



Object	Location/s	Total Number Found
pencil		
yellow colouring pencil		
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Classroom Crawlers

To understand how search engines work.



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Classroom Crawlers

To understand how search engines work.



Object	Location/s	Total Number Found
pencil		
pen		
ruler		
glue stick		
whiteboard		
paper		



Strategic Searching Online | How Search Engines Work: Web Crawlers and Web Indexing

To understand how search engines work.		
I can explain what a web crawler is.		
I can explain how web indexing works.		
I can explain how search engines work.		

Strategic Searching Online | How Search Engines Work: Web Crawlers and Web Indexing

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To understand how search engines work.		
I can explain what a web crawler is.		
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I can explain how search engines work.		








Strategic Searching Online: How Search Engines Work: Page Ranking

National Curriculum Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.		Lesson Duration It is estimated that this lesson will take approximately 60 minutes.	
Aim To understand and explain what page ranking is.			
Success Criteria I understand that search results are ranked. I can explain how search results are ranked. I can suggest some of the criteria that search engines use to decide on web page ranking. I can compare the page ranking across different search engines.		Key Vocabulary: Page rank, ranking, criteria, advertisements, program, query.	
Resources Lesson Pack PC devices, such as laptops, Chromebooks and/or tablets		Preparation Page Ranking: Comparing Search Engines Activity Sheet - one per pair Differentiated Page Ranking Detectives Activity Sheet - one per child It is advised that appropriate search engines are chosen prior to the start of the lesson. Choose three child-friendly search engines for children to use.	

Prior Learning: In this unit, children have frequently used search engines with a focus on choosing keywords and have learnt how search engines work. Children should have a good knowledge of search engines and should be confident in using them with efficiency.

Learning Sequence

	Remember It: Using the Lesson Presentation , ask the children to write down the answers to the questions based on the previous lesson. A one-minute timer is provided along with the answers.	
	Page Ranking: Using the Lesson Presentation , introduce what page ranking is in the context of search engines. Explain that search engines may have pay-per-click advertisements at the top of their search results. It would be beneficial to show children what these look like on a chosen search engine.	
	Page Ranking: Comparing Search Engines: Using the Page Ranking: Comparing Search Engines Activity Sheet , allow children the opportunity to explore different search engines. Children could use the suggested search terms on the Lesson Presentation , however these can be altered to fit the needs of children. It is recommended that in order to complete Page Ranking: Comparing Search Engines Activity Sheet appropriate search engines are chosen prior to the lesson.	
	Page Ranking: Comparing Search Engines: Using the questions on the Lesson Presentation , ask the children to reflect on what they have discovered when comparing search engines. Then ask them why they think some web pages rank higher than others. Explore what page ranking does when a search query is inputted. What criteria do children think the page rank program is looking for?	
	Page Ranking Criteria: Using the Lesson Presentation , explain some of the things the page ranking program takes into consideration. It is important to note that this list is not exclusive to one search engine and different search engines may have different criteria in their page ranking program.	
	Page Ranking Detectives: Using the Lesson Presentation , explain the scenario to the children. Ask the children what they would be expecting to see on a highly ranked web page for a given search. The example search results can be altered to fit the needs of the children or class. Why do you think Wikipedia is often a top-ranking web page?	

	<p>Page Ranking Detectives: Using the differentiated Page Ranking Detectives Activity Sheet, children should compare the web pages using one given search term. They should compare a web page ranked highly (not Wikipedia) and a web page ranked much lower.</p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="215 331 582 515">  <p>Children will compare a high-ranking web page with a lower-ranked web page. Children should use the six criteria they are given and are encouraged to add their own.</p> </div> <div data-bbox="614 331 981 515">  <p>Children will compare a high-ranking web page with a lower-ranked web page. Children should use the four criteria they are given and should add their own.</p> </div> <div data-bbox="997 331 1364 515">  <p>Children will compare a high-ranking web page with a lower-ranked web page. Children should create their own criteria, one example is provided.</p> </div> </div>	
	<p>Rank It: Using the Lesson Presentation, show the children three different web pages from the same search result and ask them to rank them in the order they think they appeared. Ask children to justify their answers.</p> <p>On the Lesson Presentation, the examples can be clicked and will take you to the web pages directly.</p> <p>It is recommended that web pages are checked prior to the beginning of the lesson.</p>	

Explore it

Sort it: Children could create their own rank it game, similar to the plenary of the lesson. Children could find three web pages which have been page ranked and ask their partner to suggest which web page was ranked the highest.

Rank it: Children could take a selection of books on a given topic and rank them based on usability. A similar criteria to the differentiated [Page Ranking Detectives Activity Sheet](#) could be used but adapted for physical books.

Organise it Using the [Knowledge Organiser](#), children could go through the words previously underlined as ones that they didn't understand and see if they can now explain them. Ask the children to highlight any words that they are still unsure of. Children could work in partners or groups to further explain any key words or vocabulary that has been mentioned but children have not yet understood.

Assessment Notes:

Disclaimers:

This unit involves children searching on the Internet. Please be mindful of search terms/topics used and connotations that could result in inappropriate links and pages. Child-friendly search engines are advised. Ensure your firewall settings are set at the appropriate levels necessary and your anti-virus software is up to date. It is good practice to ensure screen content can be seen at all times and that children know what to do if they see something on the Internet that makes them feel uncomfortable.

We hope you find the information on our website and resources useful. This resource contains links to external websites and/or external apps. Please be aware that the inclusion of any link in this resource should not be taken as an endorsement of any kind by Twinkl of the linked website and/or app, or any association with its operators. You should also be aware that we have no control over the availability of the linked pages and/or apps. If the link is not working, please let us know by contacting TwinklCares and we will try to fix it although we can assume no responsibility if this is the case. We are not responsible for the content of external sites and/or external apps.



Computing

Strategic Searching Online

Computing | Strategic Searching Online | How Search Engines Work: Page Ranking | Lesson 5

How Search Engines Work: Page Ranking



Question Marks

You will spot question marks at certain points in this **Lesson Presentation**.

Clicking the question marks will bring up key questions.



The assessment questions that appear will enable you to check your understanding against the lesson aim and success criteria.

Aim

- To understand and explain what page ranking is.

Success Criteria

- I understand that search results are ranked.
- I can explain how search results are ranked.
- I can suggest some of the criteria that search engines use to decide on web page ranking.
- I can compare the page ranking across different search engines.

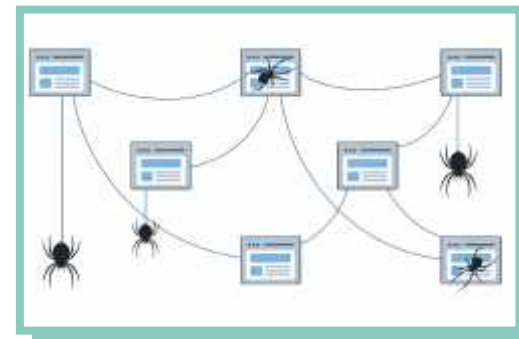
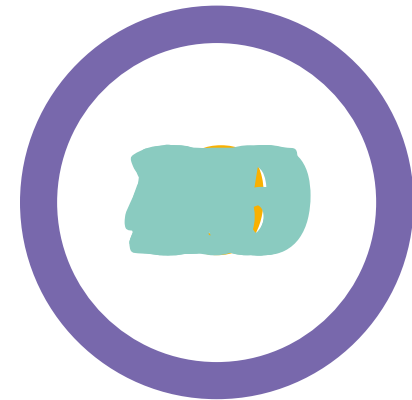
Remember It

Write an answer to these questions, based on your learning from last lesson. You have one minute.

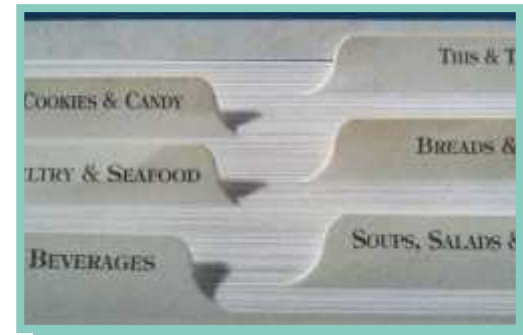
What does a web crawler do?

What is a search engine's index?

What information does a web crawler store about a web page?



Remember It



Web crawlers or spiders crawl the World Wide Web. They visit web pages through hyperlinks and store information about each page they visit. Web crawlers look for: key words, titles, sub-headings, images, videos and links to other websites. The information they find is stored away in the search engine index.

Page Ranking

It is the job of the page ranking program to sort your search results into the order they think you would find most useful. Similarly to the web crawler or spider program, each search engine has its own page ranking program. This means that web pages may be presented in a different order, depending on the search engine.

Sometimes a search engine may have an advert at the top of their search results. These web pages have paid to be at the top of the search results and have not necessarily been ranked number one by the page ranking program.





Page Ranking: Comparing Search Engines

Using the **Page Ranking: Comparing Search Engines Activity Sheet**, compare the page rank of the following search terms across different search engines.

Look at the first page of search results.

rainforests
animals
computer science for kids

Page Ranking: Comparing Search Engines

To understand and explain what page ranking is.

Using three different search engines, complete the same search. You must note down the top three web pages that appear in your search results. You do not need to write out the whole URL, just the website or web page name.

Search Engine 1	Search Engine 2	Search Engine 3
Search Term: rainforests Search Results: 1. _____ 2. _____ 3. _____	Search Term: rainforests Search Results: 1. _____ 2. _____ 3. _____	Search Term: rainforests Search Results: 1. _____ 2. _____ 3. _____
Search Term: animals Search Results: 1. _____ 2. _____ 3. _____	Search Term: animals Search Results: 1. _____ 2. _____ 3. _____	Search Term: animals Search Results: 1. _____ 2. _____ 3. _____
Search Term: computer science for kids Search Results: 1. _____ 2. _____ 3. _____	Search Term: computer science for kids Search Results: 1. _____ 2. _____ 3. _____	Search Term: computer science for kids Search Results: 1. _____ 2. _____ 3. _____

Page Ranking: Comparing Search Engines

What did you notice about the search results for different search engines?

Did you notice any similarities in the search results?

Were the search results ranked in the same order?

Did you notice any websites or web pages that appeared in one search result but not in another?



Page Ranking: Comparing Search Engines

Why do some web pages rank higher than others?

When you input your search terms into a search engine, the search engine goes through its index (made by their web crawler program) and displays the web pages in a particular order (ranked by their page ranking program) in the hopes of solving the searcher's query. In general, you can assume that the higher a website is ranked, the more relevant the search engine believes that web page is to the search terms inputted.

X

What criteria do you think the page ranking program could be looking for?



Page Ranking Criteria

Let's look at some of the criteria a page ranking program could be looking for:

Click on the key terms to find out more.

Remember, the domain name is in a web page's URL. The domain name tells us who owns the

Domain authority is a ranking domain names get out of 100. Their domain authority is based on how good their content is on a particular topic.

Remember, a website that is secure will have https within the URL.

Page Ranking Detectives

You have been tasked to do some research about living things and their habitats. Your teacher has asked you to choose an animal to research. The animal you have chosen is a lion.

Before clicking on a web page, what are you expecting to see on these web pages?

Think about:

- What key words are you expecting?
- What images do you expect to see? Photographs or illustrations?
- What format are you expecting to see?
- Are you expecting sub-headings?



X

Why do you think Wikipedia is often a top-ranking web page?





Page Ranking Detectives

Now, let's compare web pages using the search term 'lion facts'. Click on to the first web page in your search results (unless it is Wikipedia, then choose the second) and you are going to compare this web page with another web page lower down in the page rankings. Choose a web page that is on the 10th page of search results.

Use the **Page Ranking Detectives Activity Sheet** to compare the two web pages.



Rank It

Compare these three web pages. The search term inputted into a search engine were 'cheetah facts for kids'.

Can you decide which web page was ranked the highest?

Can you decide which web page was ranked lowest?

Can you justify your reasons?

Web page 1:
Empire Unleashed

Web page 2: National Geographic Kids

Web page 3:
Animals Adda

Aim

- To understand and explain what page ranking is.

Success Criteria

- I understand that search results are ranked.
- I can explain how search results are ranked.
- I can suggest some of the criteria that search engines use to decide on web page ranking.
- I can compare the page ranking across different search engines.



Page Ranking: Comparing Search Engines

To understand and explain what page ranking is.



Using three different search engines, complete the same search. You must note down the top three web pages that appear in your search results. You do not need to write out the whole URL, just the website or web page name.



Search Engine 1:	Search Engine 2:	Search Engine 3:
Search Term: rainforest Search Results: 1. _____ 2. _____ 3. _____	Search Term: rainforest Search Results: 1. _____ 2. _____ 3. _____	Search Term: rainforest Search Results: 1. _____ 2. _____ 3. _____
Search Term: animals Search Results: 1. _____ 2. _____ 3. _____	Search Term: animals Search Results: 1. _____ 2. _____ 3. _____	Search Term: animals Search Results: 1. _____ 2. _____ 3. _____
Search Term: computer science for kids Search Results: 1. _____ 2. _____ 3. _____	Search Term: computer science for kids Search Results: 1. _____ 2. _____ 3. _____	Search Term: computer science for kids Search Results: 1. _____ 2. _____ 3. _____

Page Ranking: Comparing Search Engines

To understand and explain what page ranking is.



Using three different search engines, complete the same search. You must note down the top three web pages that appear in you search results. You do not need to write out the whole URL, just the website or web page name.



Search Engine 1:	Search Engine 2:	Search Engine 3:
Search Term: Search Results: 1. _____ 2. _____ 3. _____	Search Term: Search Results: 1. _____ 2. _____ 3. _____	Search Term: Search Results: 1. _____ 2. _____ 3. _____
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Page Ranking Detectives

To understand and explain what page ranking is.



Use the table below to evaluate two web pages. Using the criteria, tick according to whether it applies to each web page. You may wish to add your own criteria of things you have spotted.



Search term:

Web page name:

Web page name:

search term appear in web page
>5 times

search term appear in web page
>5 times

search term appear in title,
headings or sub-headings

search term appear in title,
headings or sub-headings

secure protocol

secure protocol

trusted web page domain

trusted web page domain

easy to read

easy to read

quality content

quality content

Page Ranking Detectives

To understand and explain what page ranking is.



Use the table below to evaluate two web pages. Using the criteria, tick according to whether it applies to each web page. Add your own criteria of things you have spotted.



Search term:

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secure protocol

secure protocol

trusted web page domain

trusted web page domain

Page Ranking Detectives

To understand and explain what page ranking is.



Use the table below to evaluate two web pages. Create a criteria of things to look out for, ticking if they apply to each web page. One example is provided below.



Search term:

Web page name:

Web page name:

search term appear in title

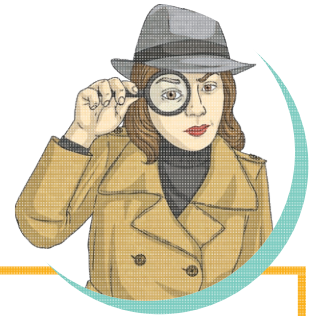
search term appear in title

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Search term:

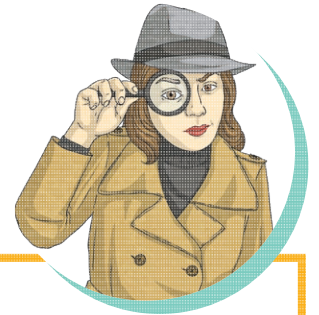
Web page name:		Web page name:	
search term appear in web page >5 times		search term appear in web page >5 times	
search term appear in title, headings or sub-headings		search term appear in title, headings or sub-headings	
secure protocol		secure protocol	
trusted web page domain		trusted web page domain	
easy to read		easy to read	
quality content		quality content	

Page Ranking Detectives

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search term appear in title,
headings or sub-headings

secure protocol

secure protocol

trusted web page domain

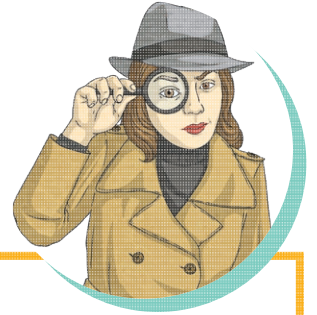
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Page Ranking Detectives

To understand and explain what page ranking is.



Use the table below to evaluate two web pages. Create a criteria of things to look out for, ticking if they apply to each web page. One example is provided below.



Search term:

Web page name:

Web page name:

search term appear in title

search term appear in title

Page Ranking Detectives

To understand and explain what page ranking is.



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Search term:

Web page name:		Web page name:	
search term appear in web page >5 times		search term appear in web page >5 times	
search term appear in title, headings or sub-headings		search term appear in title, headings or sub-headings	
secure protocol		secure protocol	
trusted web page domain		trusted web page domain	
easy to read		easy to read	
quality content		quality content	

Page Ranking Detectives

To understand and explain what page ranking is.



Use the table below to evaluate two web pages. Using the criteria, tick according to whether it applies to each web page. Add your own criteria of things you have spotted.



Search term:

Web page name:

Web page name:

search term appear in web page
>5 times

search term appear in web page
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search term appear in title,
headings or sub-headings

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secure protocol

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trusted web page domain

Page Ranking Detectives

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Use the table below to evaluate two web pages. Create a criteria of things to look out for, ticking if they apply to each web page. One example is provided below.



Search term:

Web page name:

Web page name:

search term appear in title

search term appear in title

Strategic Searching Online | How Search Engines
Work: Page Ranking

To understand and explain what page ranking is.		
I understand that search results are ranked.		
I can explain how search results are ranked.		
I can suggest some of the criteria that search engines use to decide on web page ranking.		
I can compare the page ranking across different search engines.		

Strategic Searching Online | How Search Engines
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Strategic Searching Online: Search Engine Optimisation

National Curriculum: Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.		Lesson Duration It is estimated that this lesson will take approximately 60 minutes.	
Aim: To use SEO to improve a web page.			
Success Criteria I can explain what SEO is. I can explain why SEO is used on websites. I can compare web pages against a specification. I can suggest SEO improvements on a website.	Key Vocabulary Search engine optimisation (SEO), search engine results page (SERP), marketing, server, user, target audience.		
Resources Lesson Pack PC devices, such as laptops, Chromebooks and/or tablets Highlighters	Preparation Lion Facts Web Page Activity Sheet - one per child one per child (as used in previous lessons) It is advised that appropriate search engines are chosen prior to the start of the lesson. In order to gather valuable data about how effective this unit has been and how much your children have understood the topic, we recommend completing the KWL Grid at the end of this lesson.		

Prior Learning: Children should have a good understanding of search engines, search terms and web crawlers. They should be able to explain the page ranking program that search engines use when keywords are inputted.

Learning Sequence

	Remember It: Three-in-a-Row: Use the Lesson Presentation to engage children in a game which recaps the whole unit so far. The Lesson Presentation explains the rules and provides both questions and answers.	
	SEO: Using the Lesson Presentation , briefly explain what SEO is and whose job it usually is. Why do the children think SEO is used on websites?	
	The Journey of Your Search Terms: Use the Lesson Presentation to explain where SEO fits in, with regards to what the children have previously learnt about search engines. This slide explains the journey of how websites appear in our search terms.	
	SEO In Practice: Using the Lesson Presentation , explain some of the things SEO involves checking. This list is generalised to be age-appropriate. Each given criteria has a small, brief explanation. It is recommended that time is taken on this slide to ensure children have a good understanding.	
 	SEO It: The Lesson Presentation asks the children to complete a particular search to look at top ranking web pages and to note why they believe these web pages are so successful in the page ranking. Using what the children now know about SEO, why do they think these websites rank highly on a search engine?	
	SEO It: Use the Lion Facts Web Page Activity Sheet to allow children to use their knowledge of SEO to improve a fake web page and then create an improved version on paper.	
	Time to Share, Explain, Evaluate: Using the Lesson Presentation and Lion Facts Web Page Activity Sheet , children complete a peer review. Use the instructions and prompts provided to support the children with this task.	



Putting It All Together: Children should go through their **Knowledge Organiser** and highlight all of the words they now know in one colour. If there are any words that they are still unsure of, children could ask a partner.



Explore it

Design it: Children to use an online web page making tool to create a digital version of the web page they designed. The web page should not be published unless specified.

Display it: Children to create a poster to display all of their new-found knowledge about search engines. The posters could form part of your assessment.

Assessment Notes:

Disclaimer:

This unit involves children searching on the Internet. Please be mindful of search terms/topics used and connotations that could result in inappropriate links and pages. Child-friendly search engines are advised. Ensure your firewall settings are set at the appropriate levels necessary and your anti-virus software is up to date. It is good practice to ensure screen content can be seen at all times and that children know what to do if they see something on the Internet that makes them feel uncomfortable.



Computing

Strategic Searching Online

Computing | Strategic Searching Online | Search Engine Optimisation | Lesson 6

Search Engine Optimisation



Question Marks

You will spot question marks at certain points in this **Lesson Presentation**.

Clicking the question marks will bring up key questions.



The assessment questions that appear will enable you to check your understanding against the lesson aim and success criteria.

Aim

- To use SEO to improve a web page.

Success Criteria

I can explain what SEO is.

I can explain why SEO is used on websites.

I can compare web pages against a specification.

I can suggest SEO improvements on a website.

Remember It

Three-in-a-Row

Let's split into two teams to play Three-in-a-Row!

Name yourselves **Team 1** and **Team 2**

Take it in turns to answer a question.

Click on each square to check if your answer is correct.

If you get the answer correct, click on your team number in the square. If you get it wrong, click on your opposing team number!

1

2

One correct answer is **one point**.

Three-in-a-row is an additional **five points!**

Keep trying to score points until all the questions have been answered.

Play

Three-in-a-Row

One correct answer = one point
Three in a row = an additional five points!



What clues can help you decide if a web page can be trusted?

What are the three Boolean operators that can be used in search engines?

True or False?
Search engines recognise all punctuation.

What is a web crawler?

What does URL stand for?

Where do all of the locations of web pages get stored in a search engine?

What top-level domain shows the web page is a government official?

How can you tell if a web page is secure using the URL?

Using which Boolean operator would provide a broadened search?

Give one reason why a website may not show up anywhere in search results.

Give **three** different types of content a search return result can show.

Give **two** criteria that the page ranking program looks for on web pages.

SEO

Search engine optimisation (SEO) is when a person, or group of people use their knowledge of how search engine ranking works to boost a web page's ranking in a search engine results page (SERP).

Usually, SEO is done by someone whose job is in marketing. Their job is to increase the amount of clicks the web page receives and improve where the web page ranks in given search results.



Why do you think SEO is used on websites?



The Journey of Your Search Terms

1



A company wants a web page made.

2



Web developers design and develop the web page using a basic specification given to them.

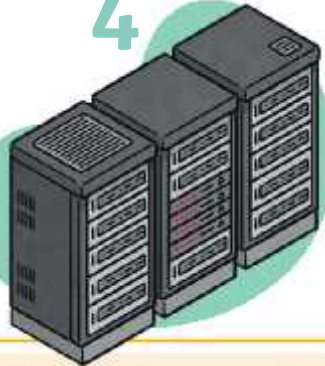
3



A marketing team will look at the web page to increase its potential ranking in search results by doing search engine optimisation.

The Journey of Your Search Terms

4



The web page is stored on a server and is now live and accessible to the public.

6



Search terms are inputted into a search engine by a user (someone like me or you).

5



Web crawlers will crawl the web page, store its location on the World Wide Web and other information about the web page, including what the web page is about. This information will be stored in the search engine's index.

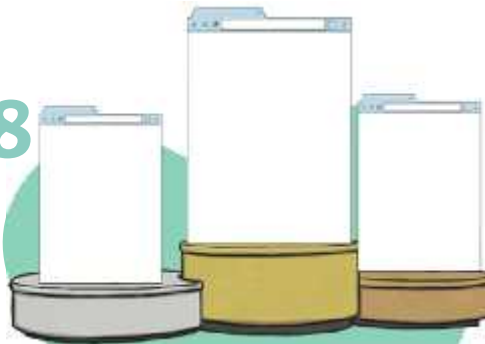
The Journey of Your Search Terms

7



The search engine will look through its search engine index to find relevant web pages.

8



A page ranking program will sort through these web pages using given criteria and rank the web pages accordingly.

9



If the web page is not getting a lot of people clicking, the marketing team will do some more SEO.

SEO In Practice

SEO involves using a given criteria and evaluating a web page against it. Some of the criteria includes:



SEO In Practice



Hyperlinks

Social Media

By promoting your website on social media, you are likely to increase the volume of traffic to your page therefore improving its ranking on the SERP.

Hyperlinks

A web page has hyperlinks within its code. A user cannot see these links but links to other notable websites help to improve a web pages ranking.

[Back](#)

SEO In Practice



Mobile-Friendly

Ease of Use

A website should be easy to navigate around and responsive to clicks by the user.

Readability

A user should be able to read the information with ease. This should be true on all devices.

Back

SEO In Practice

Back



Content

Organised Text

Making sure the text on the web page is organised into paragraphs or sections is important. Text on a web page shouldn't be too overwhelming.

Relevant Content

It's important to ensure the content of a website or web page is up to date. If a user wants facts about the current year, it is important that the website is updated every year. It is also important that the information on a website is relevant to the title and subheadings.

Correct Information

The information a website publishes needs to be accurate. A good way to check for accuracy is to look at other websites to see if your information matches theirs.

Images

Having relevant images on a website breaks up the text and makes the website easier to read.

Key words or phrases

It is good practice for a website to research on-trend key words and phrases and use these throughout their web pages. This ensures that if a user was to input these words into a search engine that website would be shown in the search engine results page (SERP).

SEO In Practice

SEO involves using a given criteria and evaluating a web page against it. Some of the criteria includes:



SEO It



Using a chosen search engine, search the words **'lion facts for kids'**.

Looking at the top-ranked websites (excluding Wikipedia), make notes about what you think makes that web page rank highly and what good SEO you think has been done.

Does the web page have:

- organised text?
- mobile-friendly?
- images?
- good readability?
- relevant content?
- correct information?
- ease of use?
- key words or phrases?

Tip

Adding **'for kids'** or **'for children'** to the end of your search terms is a great way to refine your search and help to ensure your search results are age-appropriate.

SEO It



Good examples of web pages about **Lions**:

Click on each example for a closer look.

Latin name:
Panthera leo

Class:
Mammalia

Order:
Carnivora

Family:
Felidae

Conservation status:
vulnerable

The name for lion in Swahili, an African language, is 'simba'.

In the wild they live for between 10 and 14 years. You can see our family of lions in the [enclosure of Nairobi National Park](#).

Conservation

The number of African lions in the wild is declining and they're now thought to be at risk of extinction. Over the last ten years their numbers have gone down by 30%. The main threat facing African lions in the wild is being killed as part of organised hunts.

Fun facts about lions

- Lions are the only cat that live in groups.
- A pride, or pride, can be up to 30 lions, depending on how much food and water is available.
- Female lions are the main hunters. While they're out looking for food, the males guard the pride's territory and their young.
- A lion's roar can be heard up to eight kilometres away.
- Lions can mark their territory using their feet to create a landing.

Lion 🐾 questions and answers

Improve your friends with everything you know about lions!

📌 **Where do lions live?** African lions are mostly found in sub-Saharan Africa. They used to be found all over Africa but now they have mostly disappeared from North Africa and are at risk of extinction in West Africa. Lions live in savannahs and grasslands, where some cover and plenty of water can be found.

Lion

Panthera leo

Living in the grasslands, scrub, and open woodlands of sub-Saharan Africa, the lion is the second largest cat in the world. It is dwarfed slightly by the tiger, which is closely related and has a very similar body type.



Unlike other cats, lions are very social animals. They live in groups, called prides, of around 30 lions. A pride consists of up to three males, a dozen related females, and their young. The size of the pride is determined by the availability of food and water. If resources are scarce, the pride becomes smaller.

Pride members keep track of one another by roaring. Both males and females have a very powerful roar that can be heard up to 8 km (5 mi.) away.



Using what you now know about SEO, why do you think these websites rank highly on a search engine?

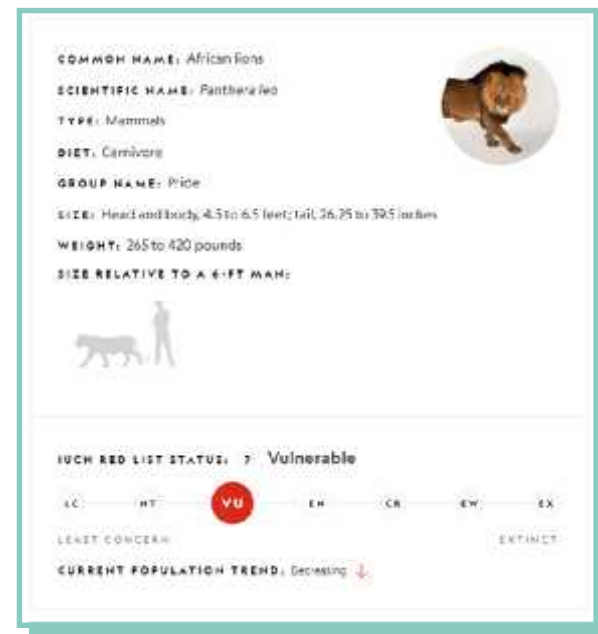


SEO It



Good examples of web pages about **Lions**:

Click on each example for a closer look.



Using what you now know about SEO, why do you think these websites rank highly on a search engine?



SEO It

Here is your task:

You have been given a web page that has been designed but it is not getting many clicks on it.
Can you improve its page ranking by using some SEO techniques?

What you need to know:

The web page is an information page all about lions.
The target audience is for children ages 7+ studying lions for a science project.

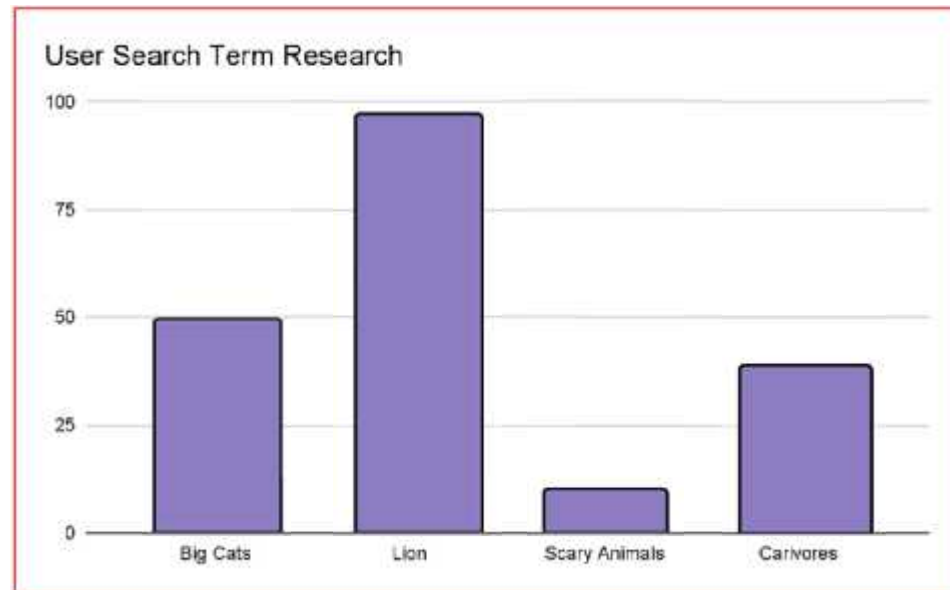
What are you expecting to find on the web page?



SEO It

Research has been conducted that will help you to improve this web page. Here are some recent search terms users have been searching for on a particular search engine.

Which key words do you think are really important to use in the web page?



SEO It

Using the **Lion Facts Web Page Activity Sheet**, can you suggest some SEO improvements for the web developer?

Can you then create a better web page (on paper) for the developer to use?

The image shows a screenshot of a web browser displaying a page titled "All About Lions". The page content includes a heading "All About Lions", a sub-heading "Fun facts about these scary animals!", and a paragraph of text. There are two images: a lion's face on a metal door and a cartoon lion. A search bar is visible at the top of the browser window. To the left of the browser window, there is a text box with the following text: "Using your knowledge of search engine optimisation, can you suggest some improvements for a web developer? You may even want to use a search engine to check some of the information."

Time to Share, Explain, Evaluate

Share your SEO improvements with your partner.

Explain what improvements you made and why.

Then listen to your partner as they explain their improvements.

Evaluate your partner's work on their [Lion Facts Web Page Activity Sheet](#).

Did your partner spot anything you didn't?

Evaluate the improvements they made.

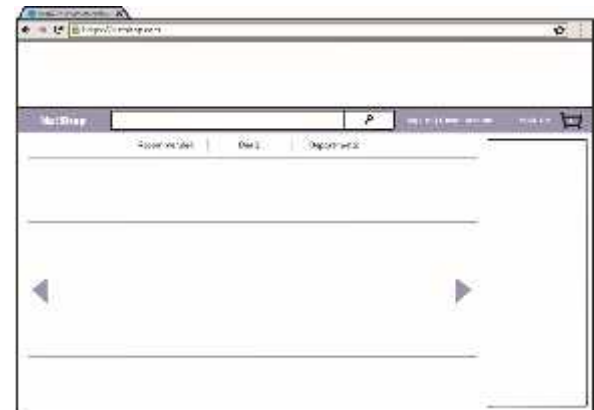


Time to Share, Explain, Evaluate

Share your new design for a web page.

Explain why you made those design choices and compare it to the original.

Evaluate your partner's web page design on their _____



Putting It All Together

Go through your **Knowledge Organiser** for one last time. Highlight all of the words you now know in one colour. If there are any words that you are still unsure of, ask a partner.


Strategic Searching Online Year 5

Key Vocabulary	
Internet	The Internet is a vast network of computers connected to each other all around the world.
search engine optimisation (SEO)	The process of getting more clicks onto a web page from a search engine by improving the web page content .
search engine results page (SERP)	Search engine results page is the list of web pages , images and videos generated by search engines in response to inputted search terms.
Uniform Resource Locator (URL)	This is the address given to find web pages on a web browser , for example, www.twinkl.co.uk .
web browser	A web browser allows you to access the Internet , including search engines and other web pages .
web crawler	A computer program that crawls across the World Wide Web to find and index pages for search engines. It is sometimes called a spider.
web page	This is a specific page that is viewed on a web browser by entering a URL address . It can display text, graphics and hyperlinks to other web pages .
website	This is a collection of web pages grouped together.


Search Engine

A search engine is a service you use on the **Internet** to help you find information via the World Wide Web.

They allow us to input words or phrases into the search bar or address bar. The search engine then provides a list of **websites** or **web pages** that link to the words or phrases that were inputted.




mathematician and inventor of Boolean logic



filters by using stars are simple conjunctions to a search engine to narrow

the address bar,



Aim

- To use SEO to improve a web page.

Success Criteria

- I can explain what SEO is.
- I can explain why SEO is used on websites.
- I can compare web pages against a specification.
- I can suggest SEO improvements on a website.



Lion Facts Web Page

To use SEO to improve a web page.



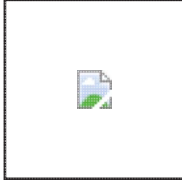

Using your knowledge of search engine optimisation, can you suggest some improvements for a web developer? You may even want to use a search engine to check some of the information.

The screenshot shows a web browser window with a tab labeled 'https://'. The address bar contains 'https://'. The page content includes the heading 'All About Lions' in red, with 'All' underlined. Below it is the sub-heading 'Fun facts about these scary animals!' in black. A paragraph of text in orange describes lion facts. To the right is a photograph of a lion's head in a circular metal frame on a door. Below the text is a small broken image icon. At the bottom right is a cartoon illustration of a lion in a suit. A text block at the bottom provides additional facts about lion weight and behavior.

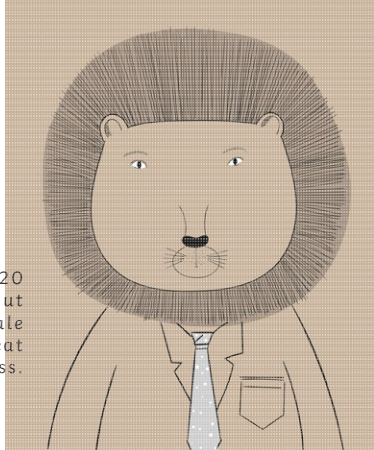
All About Lions

Fun facts about these scary animals!

They are the only big cats that live in groups. This animal's roar can be heard from up to eight kilometres away. They can live in a group or pride of 30 but this depends on how much food and water there is. These animals can weigh 30 stone!



On average, males can weigh 190kg (almost 30 stone) and females can weigh 126kg (almost 20 stone). Did you know that young lions initially have rosettes and spots on their coats, but these generally disappear as they grow older. All Lions have a mane so deciding who is male and who is female is very difficult. Lions are carnivorous, meaning they only eat the meat from other animals. These scary animals have to hunt for their food. They also eat grass.

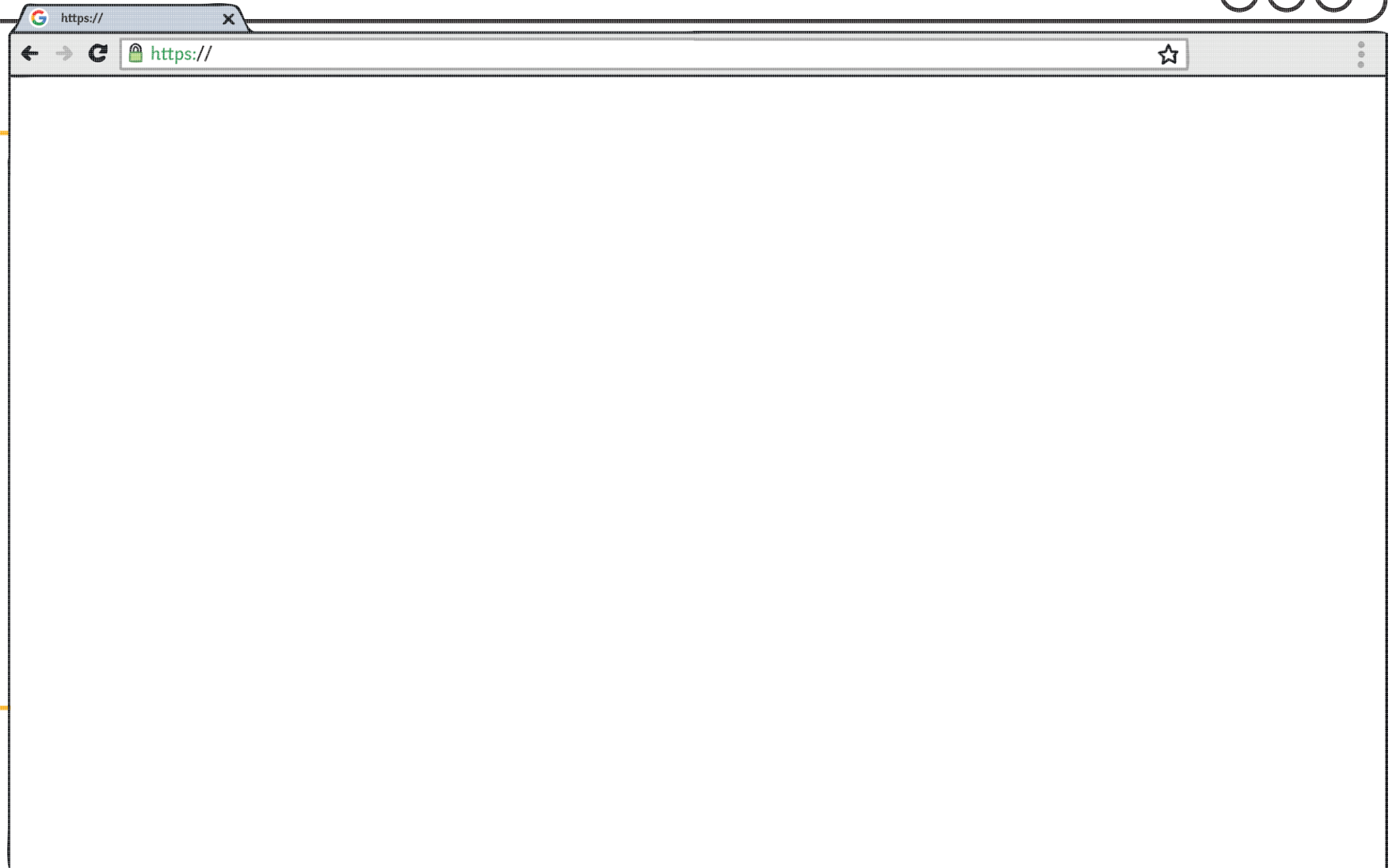


Lion Facts Web Page

To use SEO to improve a web page.



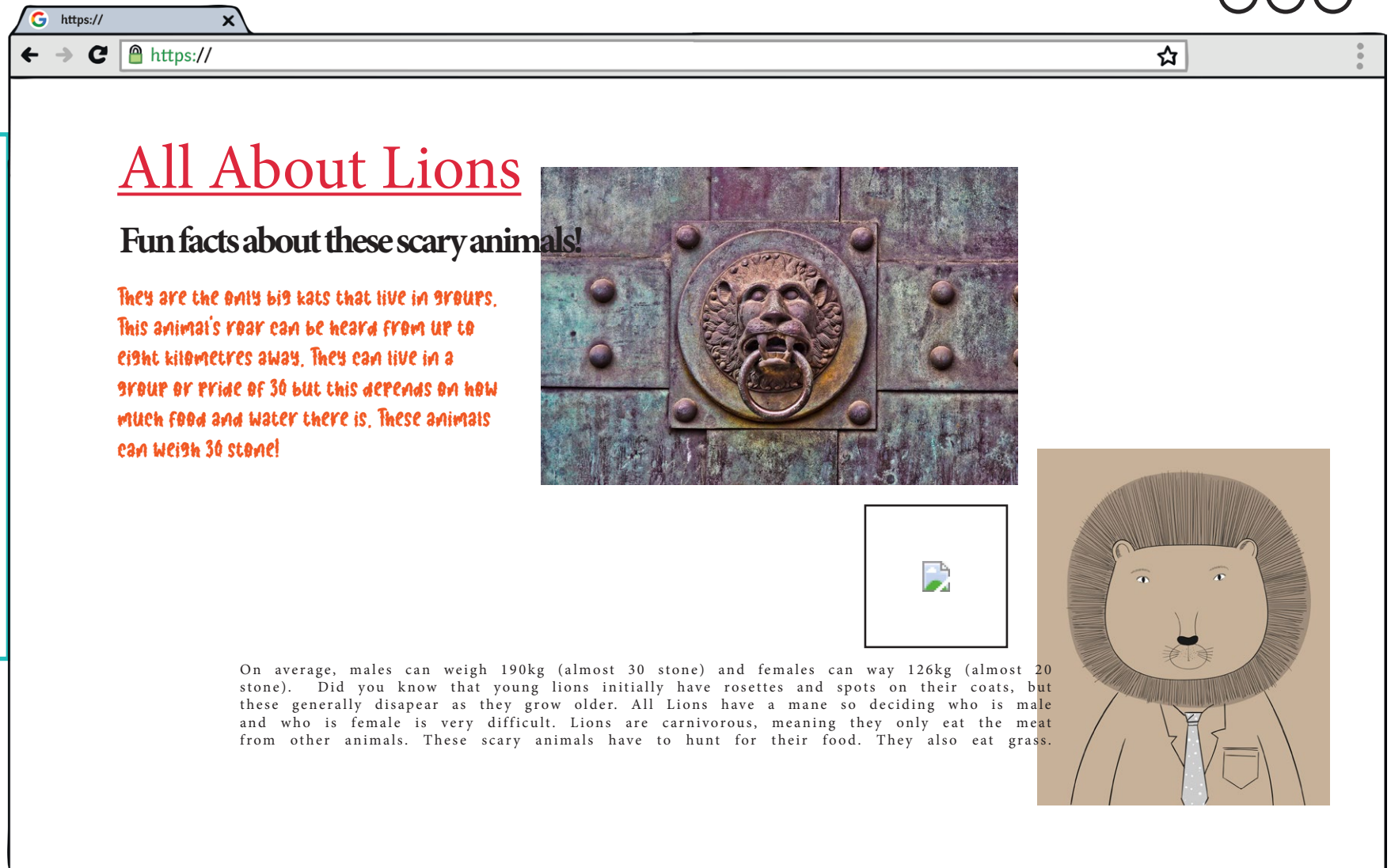
Using your SEO improvements, can you create a web page that you think would rank highly on a search engines results page (SERP)? You may even want to use a search engine to gather more content for the web page.



Lion Facts Web Page

To use SEO to improve a web page.



Using your knowledge of search engine optimisation, can you suggest some improvements for a web developer? You may even want to use a search engine to check some of the information.




All About Lions

Fun facts about these scary animals!

They are the only big cats that live in groups. This animal's roar can be heard from up to eight kilometres away. They can live in a group or pride of 30 but this depends on how much food and water there is. These animals can weigh 30 stone!



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Lion Facts Web Page

To use SEO to improve a web page.

Using your SEO improvements, can you create a web page that you think would rank highly on a search engines results page (SERP)? You may even want to use a search engine to gather more content for the web page.



Strategic Searching Online | Search Engine Optimisation

To use SEO to improve a web page.		
I can explain what SEO is.		
I can explain why SEO is used on websites.		
I can compare web pages against a specification.		
I can suggest SEO improvements on a website.		

Strategic Searching Online | Search Engine Optimisation

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Strategic Searching Online

Computing | Year 5 | Planning Overview

Introduction

In this unit about Strategic Searching Online, children will learn to use search engines with increasing efficiency. They will learn how to refine their searches using various techniques, such as using Boolean operators and using keywords. Children will also learn to look for clues to decide if a website can be trusted and whether the information presented is reliable. They will also learn how search engines work and how their search returns are ranked in a particular order. Finally, children will begin to learn how to get a web page towards the top of a returned search and will evaluate a web page based on search engine optimisation criteria. Accompanying this unit is a helpful [subject knowledge guide](#) which collates the subject knowledge for the unit and is used throughout this unit.

Hardware and Software

Hardware

- Access to PC devices, such as laptops, Chromebooks and/or tablets.

Software

- Access to web browsers, safe child-friendly search engines and links provided on lesson plans.

Health and Safety

Children should be encouraged to have good posture and sit up to the computer. Children should not spend extended periods of time looking at the screen. Ensure safe and responsible use of portable digital devices, discouraging children moving around the classroom with technology. Make sure that food and drink are kept away from all electronic items.

Home Learning

In this task, children should use a search engine to find the answers to questions. The answers to the questions will reveal a hidden word.

In this task, children should complete the suggested searches using the fewest words possible. They are then challenged to complete searches using Boolean operators.

Disclaimers

Safe Searching:

This unit involves children searching on the Internet. Please be mindful of search terms/topics used and connotations that could result in inappropriate links and pages. Child-friendly search engines are advised. Ensure your firewall settings are set at the appropriate levels necessary and your anti-virus software is up to date. It is good practice to ensure screen content can be seen at all times and that children know what to do if they see something on the Internet that makes them feel uncomfortable.

Digital and Online Safety:

Children should be shown how to use the Internet safely and responsibly. Children should be consistently reminded of the SMART rules for online safety. Devices should be used in a public area with screens visible at all times.

External Links:

We hope you find the information on our website and resources useful. This resource contains links to external websites and/or external apps. Please be aware that the inclusion of any link in this resource should not be taken as an endorsement of any kind by Twinkl of the linked website and/or app, or any association with its operators. You should also be aware that we have no control over the availability of the linked pages and/or apps. If the link is not working, please let us know by contacting TwinklCares and we will try to fix it although we can assume no responsibility if this is the case. We are not responsible for the content of external sites and/or external apps.

Assessment Statements

By the end of this unit...

Working Towards the Expected Level:

- Children can search for information using appropriate search engines.
- Children can refine their searches using appropriate keywords.
- With support, children can begin to use strategies to check the reliability of information on web pages.
- With support, children can begin to explain how search engines work using some key vocabulary.
- Children can talk about the way search results are selected and ranked.
- Children can explain what search engine optimisation (SEO) is.

Working At the Expected Level:

- Children search for information using appropriate search engines and can refine their search terms by using keywords.
- Children can refine their searches using Boolean operators with some guidance.
- Children can use strategies to check the reliability of information on web pages.
- Children can explain how search engines work using key vocabulary, such as web indexing and web crawlers.
- Children can understand that search results are ranked and can explain how page ranking works.
- Children can explain what search engine optimisation (SEO) is and can suggest some SEO improvements for a web page.

Working At Greater Depth:

- Children search for information using appropriate search engines and can refine their search terms by using keywords and Boolean operators.
- Children can confidently use strategies to check the reliability of information on web pages.
- Children can explain, with confidence, how search engines work using correct terminology and key vocabulary.
- Children can understand that search results are ranked and can confidently explain how page ranking works.
- Children can explain what search engine optimisation (SEO) is and can confidently suggest some SEO improvements for a web page.

Lesson Breakdown

1. Search Engines

Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

To find out information on the Internet using search engines.

Resources

Hardware:

- Access to PC devices, such as laptops, Chromebooks and/or tablets.

Software:

- Access to web browsers, safe search engines and links provided on lesson plans.

Additional Lesson Information and Possible Misconceptions

A common misconception addressed in this lesson is that the search engine Google is the Internet. Children will learn the difference between the Internet and the World Wide Web and that search engines are stored on the World Wide Web. Children may also have misconceptions on the difference between a web browser and a search engine. It is important for children to know that a web browser is an application software we access, such as Google Chrome, Mozilla Firefox or Microsoft Edge. A search engine is an online tool that makes it easier for you to find a website or information based on an input.

Children will be asked to complete searches using an appropriate search engine. It is important that children have access to search engines and understand there are multiple search engines that can be used.

2. Refining Searches and Using Boolean Operators

Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

To use a search engine effectively by refining the search term.

To know how to use Boolean operators to refine a search.

Resources

Hardware:

- Access to PC devices, such as laptops, Chromebooks and/or tablets.

Software:

- Access to web browsers, safe search engines and links provided on lesson plans.

Additional Lesson Information and Possible Misconceptions

It is important that children have a good grasp on how to perform a search using a search engine before this lesson. If children have had experience with computer programming, they may be familiar with the term Boolean operators. The Boolean operators used in search engines are fewer and less complex than those used in programming languages. It is also important to note that some search engines use a hyphen (-) directly before the word rather than NOT. For example: pet -dog.

3. Trusted Pages

Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

To identify what makes a website reliable and trustworthy.

Resources

- Two different coloured pencils, pens or highlighters
- Whiteboards and pens

Software:

- Access to links provided on lesson plan.

Additional Lesson Information and Possible Misconceptions

Fake Websites: Included in this lesson pack, a resource contains 'fake' website URLs. These URLs should not be attempted to be viewed. These were 'fake' at the time of print. We do not accept responsibility should these websites become live in the future.

Online Video Resource: This resource contains links to external video websites. These websites often have autoplay features meaning that other videos will play after the video you are watching finishes. You should disable this feature before using the video in any classroom or similar setting.

4. How Search Engines Work: Web Crawlers and Web Indexing

Resources

Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

To understand how search engines work.

- Whiteboards and pens

Additional Lesson Information and Possible Misconceptions

When children are completing the differentiated [Classroom Crawlers Activity Sheet](#), it is recommended that the classroom is made a safe environment for children to search for specific equipment and that all equipment is accessible for children to find.

5. How Search Engines Work: Page Ranking

Resources

Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

To understand and explain what page ranking is.

Hardware:

- Access to PC devices, such as laptops, Chromebooks and/or tablets.

Additional Lesson Information and Possible Misconceptions

It is recommended that all web pages used within the lesson are opened prior to the lesson starting. The web pages used within the [Lesson Presentation](#) and suggested search terms can be altered to fit children's needs and learning.

It is recommended that in order to complete [Page Ranking: Comparing Search Engines Activity Sheet](#), appropriate search engines are chosen prior to the lesson e.g. Google, Microsoft Bing, KidRex, Kiddle.

6. Search Engine Optimisation

Resources

Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

To use SEO to improve a web page.

- Highlighters

Hardware:

- Access to PC devices, such as laptops, Chromebooks and/or tablets.

Additional Lesson Information and Possible Misconceptions

The main task within this lesson is recommended to be used as assessment opportunity. When children are completing research-based searching for their main task, it is important that they are supervised at all times.