













Strategic Searching Online: Refining Searches and Using Boolean Operators

<p>National Curriculum Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</p> <p>Aims To use a search engine effectively by refining the search term. To know how to use Boolean operators to refine a search.</p>	<p>Lesson Duration It is estimated that this lesson will take approximately 60 minutes.</p> <div style="text-align: right; border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">60 mins</div>
<p>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.</p>	<p>Key Vocabulary: Boolean operators, search results, search terms, URL, web page, website.</p>
<p>Resources Lesson Pack PC devices, such as laptops, Chromebooks and/or tablets Highlighters</p>	<p>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.</p>

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

	<p>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.</p>	
	<p>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?</p>	
	<p>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.</p>	
	<p>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>	

	 <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.

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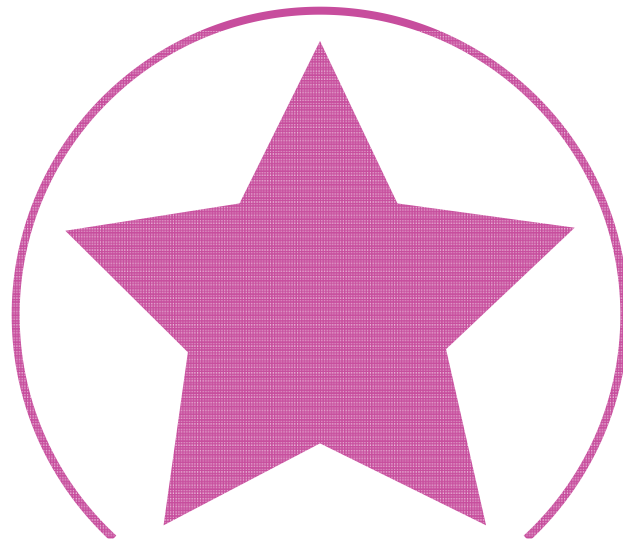
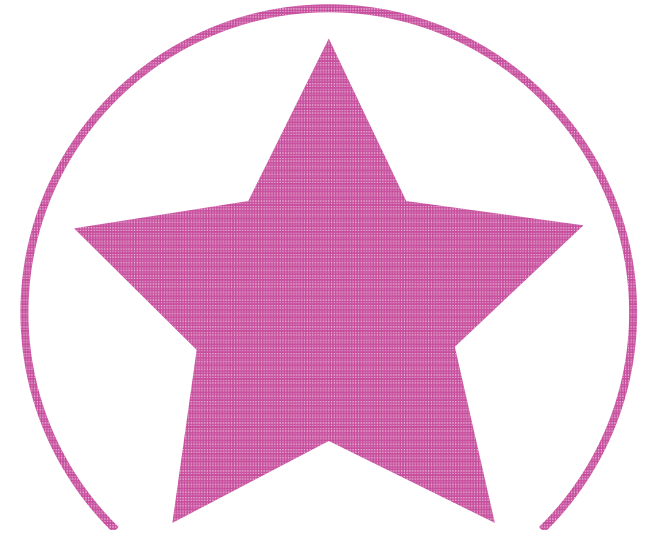












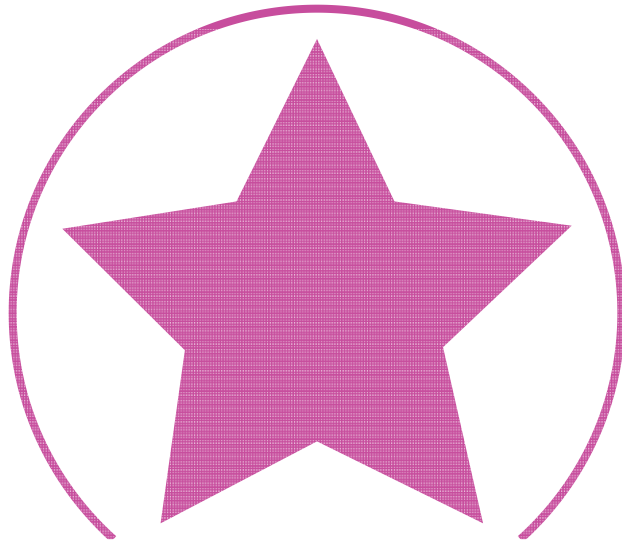




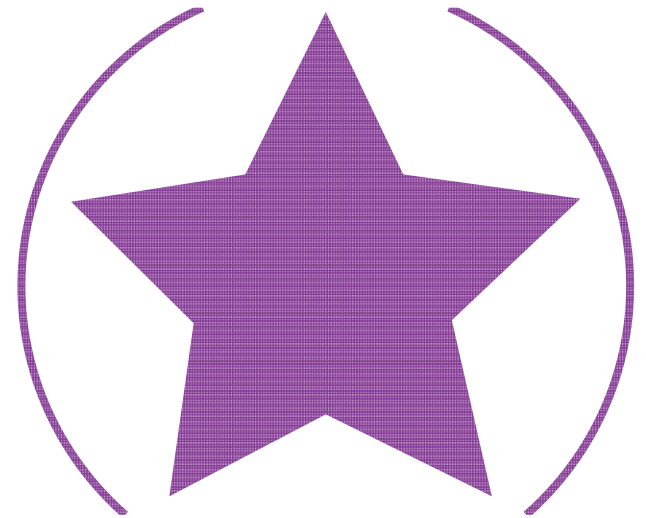
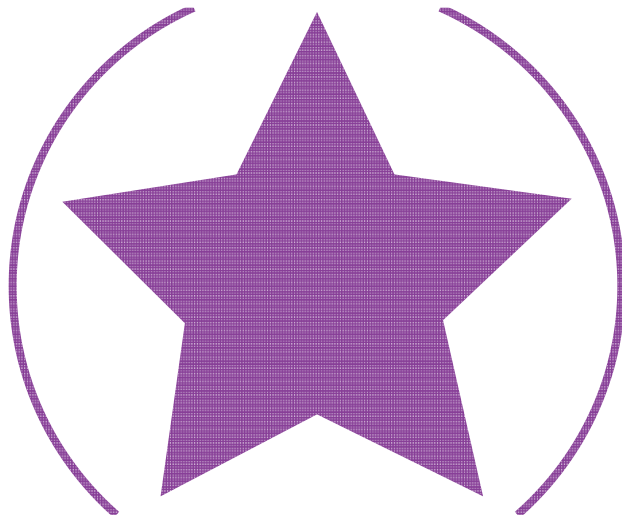




















Boolean Bingo Instructions

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



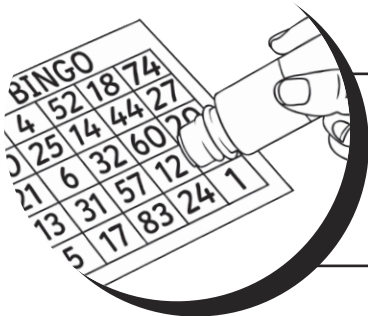
Teacher Notes: For longevity of this resource, laminate the **Boolean Bingo Boards** and provide children with whiteboard pens to cross out the numbers called during the game. This game can be played as a whole class or in groups but an adult is recommended as the Boolean Bingo Caller initially.

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.

It is recommended that the bingo caller writes down their calls as this makes it easier when checking players answers either at the end or during the game.



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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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.

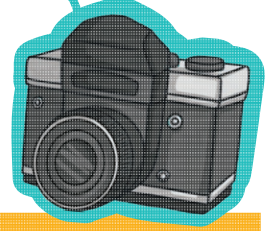

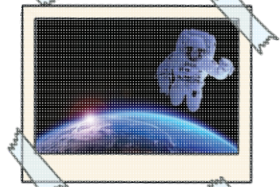
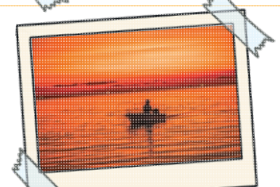
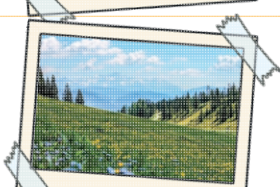
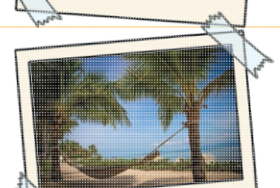


Image to Find	Keywords Used in Search Term
	tiger
	astronaut
	sunset
	field
	hammock

Word Bank

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



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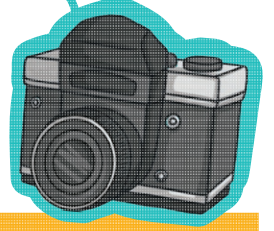

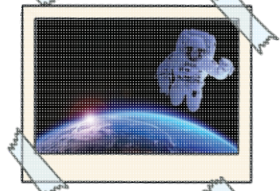
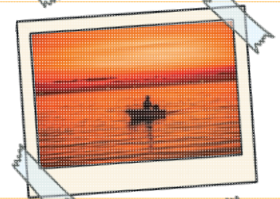




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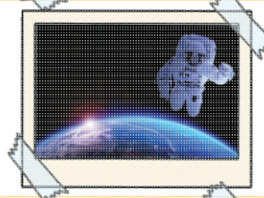
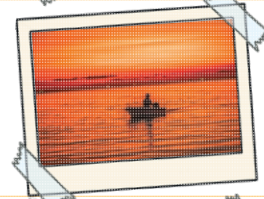


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flowers	snow	cub	coconut
boat	Earth	forest	








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