

Name:

Date:

## Science Assessment Year 3: Forces and Magnets

### Pushes and Pulls

1. Circle the correct word from each box:

A force is a sound / push or a smell / pull acting on an object / order.

Forces can make objects start / grow or burn / stop or go

quicker / quieter or slower / quieter.

5 marks

2. Write **push** or **pull** in each row to finish the table below:

(The first one has been done for you.)

Activity	Push or Pull?
Jumping on a trampoline	<b>push</b>
Hitting a ball with a bat	
Getting ready to fire an arrow	
A car taking a trailer somewhere	
Tying shoe laces	

3 marks

3. Write **start** or **stop** in each row to finish this table:

Activity	Start or Stop?
Pulling your brakes on your bike	<b>stop</b>
Kicking a ball	
A piece of toast landing on the floor	
Pedalling a bike	
Throwing a paper aeroplane	

3 marks

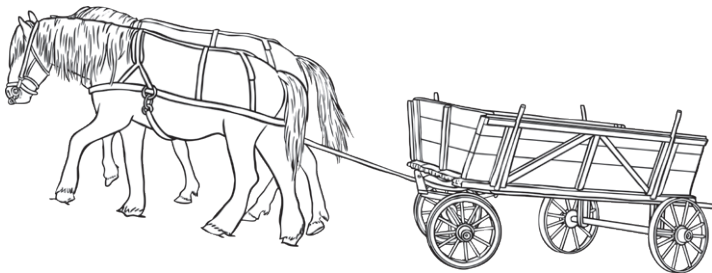
Total for this page

4. Where is the pushing force coming from in this picture?




1 mark

5. Where is the pulling force coming from in this picture?




1 mark

### Magnets

6. Circle the metals that magnets can pick up:

Gold

Iron

Aluminium

Steel

Cobalt

Copper

Silver

Nickel

2 marks

7. Write **attract** or **repel** on these bar magnets below:

Magnets	Attract or Repel?

2 marks

Total for this page

8. Name another type of magnet.

.....

1 mark

9. A compass uses magnetism. Which way does a compass always point?

.....

1 mark

10. If we do an investigation on different magnets to see how far away they were before they picked up a paper clip, what would we find out about the magnets?

.....

1 mark

Here are the results of the magnet investigation

Magnet	Distance when attracted paperclip
Medium sized horseshoe magnet	6cm
Large bar magnet	10cm
Fridge magnet	2cm

11. Which is the strongest magnet?

.....

1 mark

12. Which is the weakest magnet?

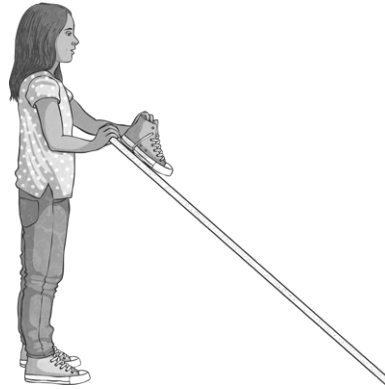
.....

1 mark

Total for this page

## Gripping Surfaces Investigation

A group of Year 3 children carried out an investigation where they had some planks of wood with different coverings. They made each plank into a ramp and put a shoe at the top. They measured how high they had to lift the plank before the shoe slid down it.



Here are the results from that investigation in a table:

Surface on plank	Height of plank when shoe slid down
Carpet	70cm
Rough wood	43cm
Rubber bath mat	82cm

13. What do these results tell you?

.....

1 mark

14. What is the name of the force that is stopping the shoe sliding down and making it grip?

.....

1 mark

15. Can you predict how high the plank would be for a smooth plastic surface similar to a slide in an adventure playground?

.....










1 mark

Total for this page

# Answer Sheet: Science Assessment Year 3:

## Forces and Magnets

question	answer	marks	notes												
<b>1. Circle the correct word from each box.</b>															
	A force is a <b>PUSH</b> or a <b>PULL</b> acting on an <b>OBJECT</b> . Forces can make objects <b>START</b> or <b>STOP</b> or go <b>QUICKER</b> or <b>SLOWER</b> .	5	5 marks available: 0 marks for 1 correct 1 mark for 2 or 3 correct 2 marks for 4 correct 3 marks for 5 correct 4 marks for 6 correct 5 marks for 7 correct												
<b>2. Write PUSH or PULL in each row to finish the table below.</b>															
	<table border="1"> <thead> <tr> <th>Activity</th> <th>Push or Pull?</th> </tr> </thead> <tbody> <tr> <td>Jumping on a trampoline</td> <td>push</td> </tr> <tr> <td>Hitting a ball with a bat</td> <td><b>push</b></td> </tr> <tr> <td>Getting ready to fire an arrow</td> <td><b>pull</b></td> </tr> <tr> <td>A car taking a trailer somewhere</td> <td><b>pull</b></td> </tr> <tr> <td>Tying shoe laces</td> <td><b>pull</b></td> </tr> </tbody> </table>	Activity	Push or Pull?	Jumping on a trampoline	push	Hitting a ball with a bat	<b>push</b>	Getting ready to fire an arrow	<b>pull</b>	A car taking a trailer somewhere	<b>pull</b>	Tying shoe laces	<b>pull</b>	3	3 marks available: 0 marks for 1 correct 1 mark for 2 correct 2 marks for 3 correct 3 marks for 4 correct  Remember that the first one was a given example.
Activity	Push or Pull?														
Jumping on a trampoline	push														
Hitting a ball with a bat	<b>push</b>														
Getting ready to fire an arrow	<b>pull</b>														
A car taking a trailer somewhere	<b>pull</b>														
Tying shoe laces	<b>pull</b>														
<b>3. Write start or stop in each row to finish this table:</b>															
	<table border="1"> <thead> <tr> <th>Activity</th> <th>Start or Stop?</th> </tr> </thead> <tbody> <tr> <td>Pulling your brakes on your bike</td> <td>Stop</td> </tr> <tr> <td>Kicking a ball</td> <td><b>Start</b></td> </tr> <tr> <td>A piece of toast landing on the floor</td> <td><b>Stop</b></td> </tr> <tr> <td>Peddalling a bike</td> <td><b>Start</b></td> </tr> <tr> <td>Throwing a paper aeroplane</td> <td><b>Start</b></td> </tr> </tbody> </table>	Activity	Start or Stop?	Pulling your brakes on your bike	Stop	Kicking a ball	<b>Start</b>	A piece of toast landing on the floor	<b>Stop</b>	Peddalling a bike	<b>Start</b>	Throwing a paper aeroplane	<b>Start</b>	3	3 marks available: 0 marks for 1 correct 1 mark for 2 correct 2 marks for 3 correct 3 marks for 4 correct  Remember that the first one was a given example.
Activity	Start or Stop?														
Pulling your brakes on your bike	Stop														
Kicking a ball	<b>Start</b>														
A piece of toast landing on the floor	<b>Stop</b>														
Peddalling a bike	<b>Start</b>														
Throwing a paper aeroplane	<b>Start</b>														
<b>4. Where is the pushing force coming from in this picture?</b>															
	1 mark for either of: <ul style="list-style-type: none"> <li>The adult's/mum's hands</li> <li>The adult/mum</li> </ul>	3	Do not accept hands with no definer as there are two pairs of hands in the picture.												
<b>5. Where is the pulling force coming from in this picture?</b>															
	1 mark for: <ul style="list-style-type: none"> <li>The horse</li> </ul>	1													

question	answer	marks	notes								
<b>6. Circle the metals that magnets can pick up.</b>											
	Gold <u>Iron</u> Aluminium <u>Steel</u> <u>Cobalt</u> Copper      Silver <u>Nickel</u>	2	Answers include circled and none circled answers. 0 marks for 0-4 correct 1 mark for 5-7 correct 2 marks for all 8 correct Positive choices can be circled, ticked or similar.  Negative choices can be left blank or crossed/scrubbed out.								
<b>7. Write ATTRACT or REPEL on these bar magnets below.</b>											
	<table border="1"> <thead> <tr> <th>Magnets</th> <th>Attract or Repel?</th> </tr> </thead> <tbody> <tr> <td></td> <td><b>Attract</b></td> </tr> <tr> <td></td> <td><b>Repel</b></td> </tr> <tr> <td></td> <td><b>Repel</b></td> </tr> </tbody> </table>	Magnets	Attract or Repel?		<b>Attract</b>		<b>Repel</b>		<b>Repel</b>	2	2 marks available: 0 marks for 0-1 correct 1 mark for 2 correct 2 marks for all 3 correct
Magnets	Attract or Repel?										
	<b>Attract</b>										
	<b>Repel</b>										
	<b>Repel</b>										
<b>8. Name another type of magnet.</b>											
	1 mark for any from: <ul style="list-style-type: none"> <li>• Button</li> <li>• Horseshoe</li> <li>• Cylindrical</li> <li>• Arc/crescent</li> <li>• Ring</li> <li>• Square</li> </ul>	1	Also give credit for any magnet types not listed here, but you have covered in class lessons.								
<b>9. A compass uses magnetism. Which way does a compass always point?</b>											
	1 mark for: <ul style="list-style-type: none"> <li>• North</li> </ul>	1	Does not need capital letter for mark, but a capital must be encouraged in lessons/feedback.								
<b>10. If we do an investigation on different magnets to see how far away they were before they picked up a paper clip, what would we find out about the magnets?</b>											
	1 mark for any from: <ul style="list-style-type: none"> <li>• Magnet strength</li> <li>• How strong the magnet is</li> <li>• Strength</li> <li>• The strength of the magnetism</li> </ul>	1	Answer must include the word strong/strength.								
<b>11. Which is the strongest magnet?</b>											
	1 mark for either of: <ul style="list-style-type: none"> <li>• Large bar magnet</li> <li>• Bar magnet</li> </ul>	1									

question	answer	marks	notes
<b>12. Which is the weakest magnet?</b>			
	1 mark for either: <ul style="list-style-type: none"> <li>• Fridge magnet</li> <li>• Fridge</li> </ul>	1	
<b>13. What do these results tell you?</b>			
	1 mark for answers that include any of: <ul style="list-style-type: none"> <li>• Rubber has more grip than carpet/rough wood</li> <li>• Carpet has more grip than rough wood</li> <li>• Carpet has less grip than the rubber mat</li> <li>• Rough wood has less grip than carpet/rubber mat</li> <li>• Rubber bath mat has the most grip</li> <li>• Rough wood has the least grip</li> </ul>	1	Interchange the word grip for friction
<b>14. What is the name of the force that is stopping the shoe sliding down and making it grip?</b>			
	1 mark for: <ul style="list-style-type: none"> <li>• Friction</li> </ul>	1	
<b>15. Can you predict how high the plank would be for a smooth plastic surface similar to a slide in an adventure playground?</b>			
	1 mark for answers in the region: <ul style="list-style-type: none"> <li>• 10cm-40cm</li> </ul>	1	Cm does not need to be present in the answer to get the mark, but this must be encouraged in lessons/feedback.
		Total 25	