Name: Date:

25 total marks

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	**push**
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	**stop**
Kicking a ball	
A piece of toast landing on the floor	
Pedalling a bike	
Throwing a paper aeroplane	

3 marks

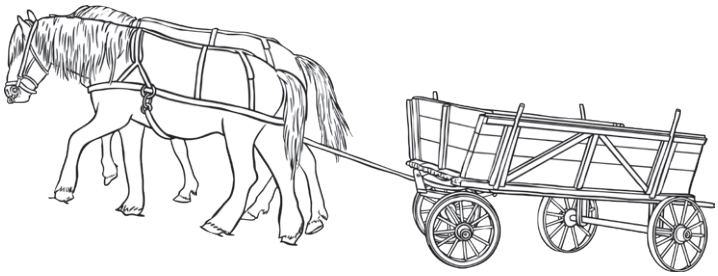
Total for this page

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?

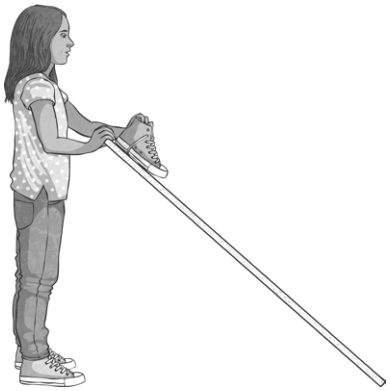
.....

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

<table>
<tr><th>question</th><th>answer</th><th>marks</th><th>notes</th></tr>
<tr><td colspan="4">1. Circle the correct word from each box.</td></tr>
<tr><td></td><td>A force is a PUSH or a PULL acting on an OBJECT. Forces can make objects START or STOP or go QUICKER or SLOWER.</td><td>5</td><td>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</td></tr>
<tr><td colspan="4">2. Write PUSH or PULL in each row to finish the table below.</td></tr>
<tr><td></td><td><table><tr><th>Activity</th><th>Push or Pull?</th></tr><tr><td>Jumping on a trampoline</td><td>push</td></tr><tr><td>Hitting a ball with a bat</td><td>push</td></tr><tr><td>Getting ready to fire an arrow</td><td>pull</td></tr><tr><td>A car taking a trailer somewhere</td><td>pull</td></tr><tr><td>Tying shoe laces</td><td>pull</td></tr></table></td><td>3</td><td>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.</td></tr>
<tr><td colspan="4">3. Write start or stop in each row to finish this table:</td></tr>
<tr><td></td><td><table><tr><th>Activity</th><th>Start or Stop?</th></tr><tr><td>Pulling your brakes on your bike</td><td>Stop</td></tr><tr><td>Kicking a ball</td><td>Start</td></tr><tr><td>A piece of toast landing on the floor</td><td>Stop</td></tr><tr><td>Pedalling a bike</td><td>Start</td></tr><tr><td>Throwing a paper aeroplane</td><td>Start</td></tr></table></td><td>3</td><td>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.</td></tr>
<tr><td colspan="4">4. Where is the pushing force coming from in this picture?</td></tr>
<tr><td></td><td>1 mark for either of:
• The adult's/mum's hands
• The adult/mum</td><td>3</td><td>Do not accept hands with no definer as there are two pairs of hands in the picture.</td></tr>
<tr><td colspan="4">5. Where is the pulling force coming from in this picture?</td></tr>
<tr><td></td><td>1 mark for:
• The horse</td><td>1</td><td></td></tr>
</table>

question	answer	marks	notes
6. Circle the metals that magnets can pick up.			
	Gold (Iron) Aluminium (Steel) (Cobalt) Copper Silver (Nickel)	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/ scribbled out.
7. Write ATTRACT or REPEL on these bar magnets below.			
	Magnets / Attract or Repel?  **Attract**  **Repel**  **Repel**	2	2 marks available: 0 marks for 0-1 correct 1 mark for 2 correct 2 marks for all 3 correct
8. Name another type of magnet.			
	1 mark for any from: • Button • Horseshoe • Cylindrical • Arc/crescent • Ring • Square	1	Also give credit for any magnet types not listed here, but you have covered in class lessons.
9. A compass uses magnetism. Which way does a compass always point?			
	1 mark for: • North	1	Does not need capital letter for mark, but a capital must be encouraged in lessons/feed-back.
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 for any from: • Magnet strength • How strong the magnet is • Strength • The strength of the magnetism	1	Answer must include the word strong/ strength.
11. Which is the strongest magnet?			
	1 mark for either of: • Large bar magnet • Bar magnet	1	

question	answer	marks	notes
12. Which is the weakest magnet?			
	1 mark for either: • Fridge magnet • Fridge	1	
13. What do these results tell you?			
	1 mark for answers that include any of: • Rubber has more grip than carpet/rough wood • Carpet has more grip than rough wood • Carpet has less grip than the rubber mat • Rough wood has less grip than carpet/ rubber mat • Rubber bath mat has the most grip • Rough wood has the least grip	1	Interchange the word grip for friction
14. What is the name of the force that is stopping the shoe sliding down and making it grip?			
	1 mark for: • Friction	1	
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 for answers in the region: • 10cm-40cm	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	