1 Label each picture with either *pushing* or *pulling* to describe the force shown.

2 Fill in the missing letters to complete the following passage.

Even obj__cts that don't m__ve are affected by f__rc__s. Forces can cause things to ch__nge their sp__ __d or make things change d__r__ction. Some forces can even make things change their sh__p__.

3 Unscramble these three types of forces (each group makes a single word):

gravy it _____

retty icicle _____

gant mimes _____

4 What are the opposites of these terms?

push _____

without _____

5 Make describing words out of these naming words. Write them in the sentences in the second column.

naming words (nouns)	describing words (adjectives)
magnetism	Some people have lots of m__ __ __ __ __ __c objects on their fridge doors.
electricity	My brother has an e__ __ __ __ __ __c train set.
gravity	It takes a lot of energy to make a rocket escape from the Earth's g__ __ __ __ __ational field.

6 Using your own words, explain why we can't easily see the effects of forces in the nucleus of an atom.

_____

_____

_____

7 Read this information about how forces work together. Use the word bank to fill in the spaces and complete the passage.

change slow unbalanced direction same keep

When the forces affecting a moving object are balanced, it will _____ going at the _____speed and in the same_____. But when they are _____, the object will speed up, _____ down, stop or _____direction.

8 Write the opposites of these words in the spaces.

moving _____

balanced _____

going _____

same _____

slow _____

stop _____

9 Use the letters in the box to complete these words. The first one has been done for you.

balance	__ __ __anced	__ __ __ancing

b
l
a

10 What name have scientists given to the unit of measurement of force?

_____

11 Write the correct letters in the arrows to label the picture on the right. It shows us how a newton meter works.

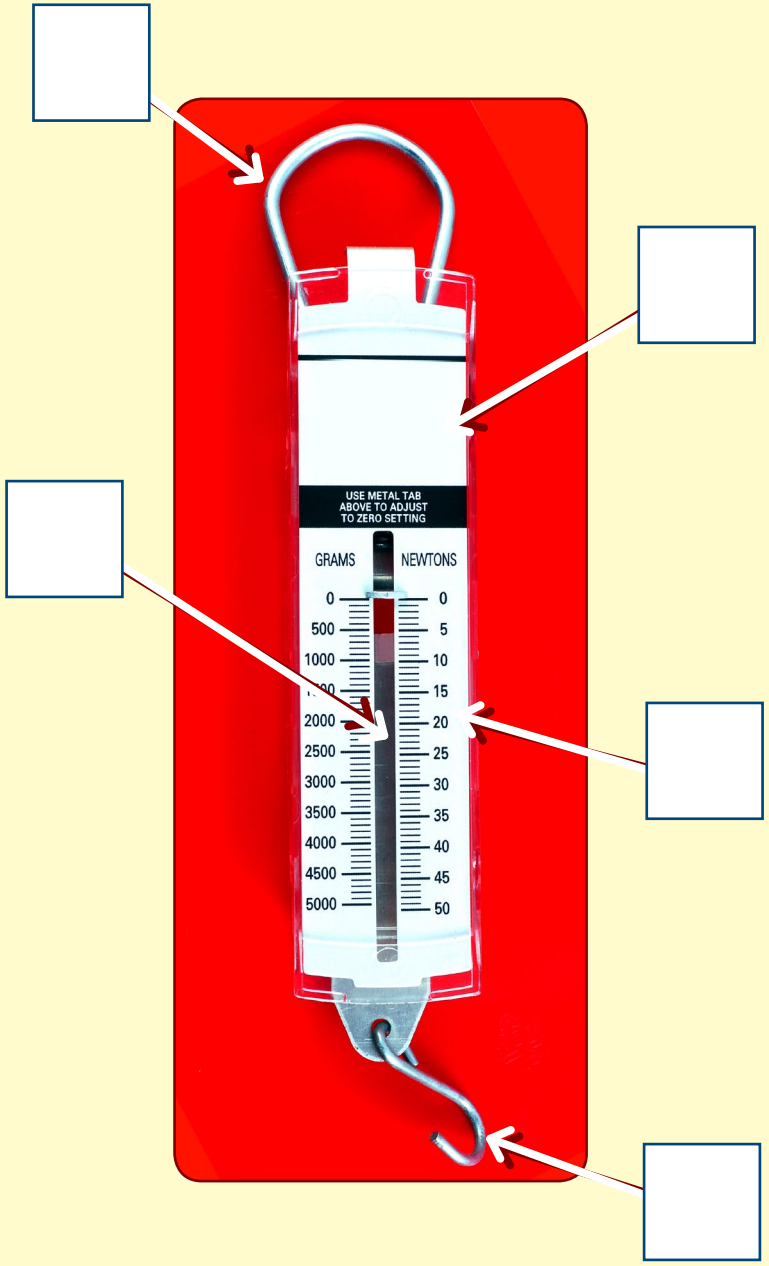
A Its body is a **cylinder**

B it has a **spring** inside

C it is held up at the top by a ring

D a hook hangs from the bottom of the spring

E a **gauge** shows us how far the spring has moved



12 Re-write these words by adding the missing vowels to complete them. Use the meanings given to help you.

Letters	Word	Meaning
m t n	_____	movement
n w t n	_____	unit of measurement
n r t	_____	resistance to a change in movement

13 Write in all the missing vowels to complete this sentence.

N__wton's f__rst l__w of m__t__ __n says that to ch__nge the m__v__m__nt of an obj__ct, we need to __se a f__rc__.

14 Write these four words in the spaces below. The lines break them into syllables.

newton movement motion inertia

__ __ __ / __ __ __ __ __ __ __ / __ __ __ __

__ __ / __ __ __ __ __ __ / __ __ / __ __ __

Hint

The syllable rule
Every syllable needs to have a vowel.

15 Look at the picture. Both teams are applying equal forces, but in opposite directions. What force are they using?

p__ __ __ __ __g

16 If Team A pulls harder than Team B, what will happen? Finish the sentence.

Team A will make Team B move _____.

17 Select the thing from each pair that has the most matter.

- ☐ cricket ball
- ☐ feather
- ☐ train
- ☐ frisbee
- ☐ snowflake
- ☐ emu
- ☐ boomerang
- ☐ car

18 Match these words to their meanings by writing them in the correct spaces.

stop mass forwards acceleration speed slow

_____ amount of matter

_____ the opposite of fast

_____ the opposite of backwards

_____ an increase in speed

_____ the opposite of start

_____ the rate a thing moves at

19 Change this word beginning into different forms using the letters provided.

accele

add 'rate' _____

add 'ration' _____

add 'rating' _____

20 Write the opposites of these things in the spaces provided.

pushing __ __ll__ __ __

stopping st__ __ __ __ __ __

stable u__s__ __ __ __ __

strong w__ __ __

slowing down sp__ __ __ __ __ __ up

unequal __ __ __ __ __

21 Which of these action forces is greater? Write *greater* in the correct box.

22 Count how many times the word force is used in this passage.

Imagine that you are a **force**. You are standing in the centre of a cricket field. All the grass around you is part of your **force** field. You are a powerful **force** that can affect any object that is on the grass. The grandstands and other seats are not in the **force** field. They are outside of it. All types of **force** fields are spherical (in the shape of a circle), like a cricket ball. **Force** fields become weaker towards the edges that are furthest away from the centre, where the **force** is located. Magnets create **force** fields that become stronger as you get closer to the magnet in the centre.

Number of times = _____

23 Write these fragments in the correct order to make a definition of the term *force field*.

where an object a region may be affected by a force

_____

_____

24 Imagine you have a plastic bag full of iron nails. Even though the nails are in a plastic bag, what do you think will happen when you place a strong magnet near the nails? Complete the sentence below to answer.

The bag of nails will _____

_____

25 A magnetic puzzle: Imagine you have a pile of metal paperclips on a glass coffee table. What are TWO ways that you could use a magnet to make the paperclips move around without touching them? Use the words below to help you write about the first method you could use. You will need to add some more words of your own to make a complete sentence.

magnet hold just above table

_____

_____

Use the words below to help you write about the second method you could use. You will need to add some more words of your own to make a complete sentence.

underneath table magnet move

_____

_____