

## Factors & Common Factors

### Step 1

A factor is a number that divides into another number exactly and we often talk about factor pairs. These are the pair of numbers that when multiplied together give us the number as the product (answer).

For example:

$$\text{Factors of 12} = 1 \times 12$$

$$2 \times 6$$

$$3 \times 4$$

### Step 2

Then list your factor pairs in ascending order, ignoring any duplicates.

$$\text{Factors of 12} = 1, 2, 3, 4, 6, 12$$

### Step 3

To find the common factors, find the factor pairs of both numbers.

$$8 = 1 \times 8 \quad 12 = 1 \times 12$$

$$2 \times 4 \quad 2 \times 6$$

$$3 \times 4$$

### Step 4

Circle the numbers that appear in both lists. These are your common factors.

$$\text{Common factors of 8 and 12} = 1, 2, 4$$

Factors of:	Answer
8	
35	
16	
40	
24	
64	

Greatest common factor (GCF)	Answer
12 and 18	
30 and 48	
36 and 45	
18 and 21	
9 and 20	
28, 56 and 70	

## SHARK ATTACK!

It was a boiling hot day; the sun relentless in the sky above, staring down upon us as though determined to scorch the entire Earth. As I ran down the soft, sandy beach, my spirits were high as the colourful kites being flown. The beautiful board I carried had been given to me for Christmas by my brother – a stylish, short board with a concave bottom for speed over the water; the design a sleek, silver shark on the pale-blue background.

Paddling the board hard out to sea, I was helped by the wind which was whipping up waves and promising an exciting day's surfing. Jason, who was a champion surfer and good friend, passed me whooping loudly as he rode a large roller. I felt good – King of the Ocean! What could possibly go wrong? A massive wave was approaching and I held my board in position – poised to leap on and ride the crest. My whole body was concentrated and ready, so it was with something like annoyance that I was distracted by a thump on the leg.

"Driftwood," I told myself and gave it not a second thought.

The wave was close. I crouched in the water. Tensed. Then I heard Jason's shout,

"Behind you!"

He sounded urgent. I flashed a look. A fin. Moving at speed. Towards me!

With a huge leap, I left the water, just as the enormous creature rose below me, its jaws wide open.

The wave whipped me away but what had happened to my balance? At first, I thought it was panic that was making me fall. I was an expert surfer. Furious with myself (and terrified as I needed to get to the safety of the beach), I went to crouch and toppled into the water. I had no leg. Blood was pouring out of where my calf should have been. Shock and adrenalin was making me oblivious to pain, but not fear . . . and I knew the shark would be back for more.



“Get on! NOW!”

Suddenly, Jason was there, pulling me onto his long, slim board and while holding on – lying full length – I was surfed by him back to shore, where arms carried me up the beach. As I lost consciousness, snippets of conversation made it to my brain:

“Tiger shark . . . four metres at least . . . not a chance . . .”

“ . . . below the knee . . . lucky to be alive!”

I thought of my brother, my board, my arrogance. What had gone wrong? King of the Ocean? What had happened to my respect for the sea – its power and unpredictability? It would never happen again!

# Tiger Sharks

Named for the dark stripes found on juvenile sharks, which fade as they grow to maturity, the Tiger shark is second only to the Great White in the number of attacks on humans.

## Size

Tiger sharks can grow up to 6 or 7 metres in length and weigh up to 900 kilograms – that is four times the length of a man and ten times his weight! They take a long time to grow and have low reproduction rates.



## Habitat

Tropical or sub-tropical seas

## Diet

A carnivore, the Tiger shark, which will eat anything, has been found to have a huge variety of fish in their stomachs and even metal licence plates and tyres!

Their sharp, serrated teeth and powerful jaws allow them to crack shells – allowing them to eat such foods as turtles.



Humans hunt Tiger sharks in order to use their meat, skin and fins. Their livers, which are high in Vitamin A are often used in Vitamin supplements. *Finning* is when a shark's fins are removed and the body (often still alive) is thrown back into the sea. A shark cannot swim without its fins so will suffocate or be eaten.

Due to humans, the Tiger shark is on the vulnerable list.

## SHARK ATTACK QUESTIONS

1. Who had given him the board? Father? Mother?  
Friend? Brother? (1 mark)
2. Three figures of speech (simile, metaphor etc.) are used in the first paragraph of the story. Copy them down and write what they are called. (3 marks)
3. What does the surfer mean when he says "King of the Ocean." (2 marks)
4. What is meant when it says Jason was riding "a large roller"? (1 mark)
5. What did the boy think he had been hit by? (1 mark)
6. He sounded urgent. I flashed a look. A fin. Moving at speed. Towards me! These are not all proper sentences with subject and verb. Why has the author punctuated it like this? What effect does it have on the reader? (2 marks)
7. How did he become aware of his injuries? (2 marks)

8. Why has the author used ellipsis in the conversation the boy heard before he lost consciousness?  
(1 mark)
9. What is meant by 'juvenile sharks'?  
(1 mark)
10. Why are there text boxes in the non-fiction piece about Tiger sharks?  
(2 marks)
11. How are sharks able to eat turtles?  
(2 marks)
12. Should 'finning' be illegal? Explain what it is and why you think yes or no.  
(3 marks)

# SHARK ATTACK ANSWERS

1. Brother

2. high as the colourful kites – simile  
the sun staring – personification  
sleek, silver shark – alliteration

3. He meant he was feeling good and was a good surfer so felt like he ruled the ocean – he was in control. (or similar)

4. Wave

5. Driftwood

6. Short sentences to create tension. Creates excitement in reader who wants to read on and find out what happened.

7. He couldn't balance, crouched and fell off board – saw blood coming out of where calf should be.

8. Ellipsis to show words are missing – he only heard some of it

9. Young, immature sharks

10. To make it easier to read. To section text into different subjects – diet habitat etc.

11. Sharp, serrated teeth and powerful jaws

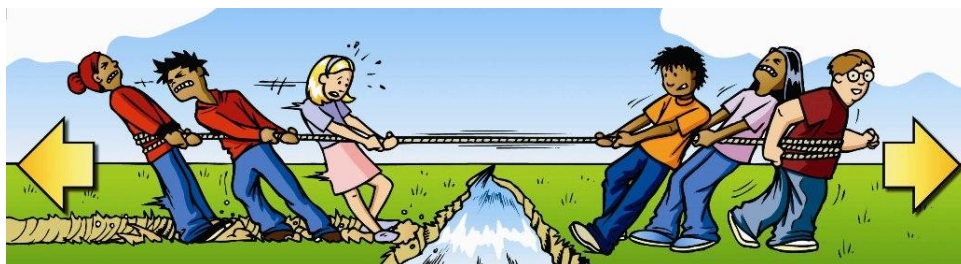
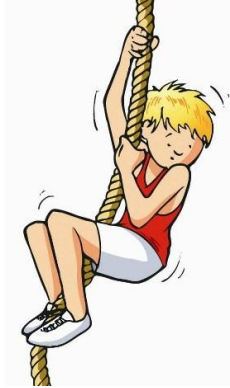
12. No, because they only take the fins and waste the entire body of the shark to save room on the boat when the whole shark could be eaten. Sharks are often still alive and will die a horrible death as they are unable to swim and thus breathe. Tiger sharks are on the vulnerable list so should not be hunted at all as they may become extinct.

# 1 Forces

## Activity 1

Forces can be either pushes or pulls.

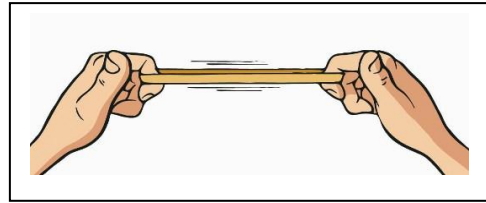
Look at the diagrams below and decide whether the force is a push or pull or both.



### Activity 2

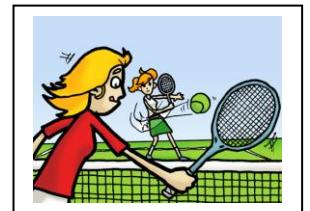
Forces can also make things change shape.

What force would you use to stretch an elastic band?



What force would you use when using a rolling pin to roll out pastry?

When a tennis player hits the tennis ball, what happens to the tennis ball?



### Activity 3

Draw arrows to show the direction of the force on each of the following:



**Challenge** *Moving toys*

Collect some toys that move, for example a yo-yo, a skipping rope, a wind-up car, etc.  
What forces are needed to make them move?

Can you explain to someone how they move?

## The Tunnel



### Story starter!

She had been tracking the deer. Her parents had taught her how.

One hour before, finding the hoof prints in the soft earth, she had followed the trail of broken twigs and occasional nibbled leaf until she had located it. Creeping slowly and quietly, not making even the slightest sound, she remained undetected.

She had stumbled across the mysterious circles in a clearing in the forest, and watched as the deer approached them. With a slight twitch of its ears, the deer stepped indifferently through the first circle, and vanished. Completely vanished.

The girl let out a gasp, and walked towards the circles to investigate...

Can you continue the story? Does the girl step through the circle?

### Question time!

Who do you think made the circles?

How long do you think they have been there?

Do the stones on the ground have any significance?

If you were the girl, would you step through the circles?

### Sentence challenge!

Can you write use a colon to start a list? Remember to use commas to separate the items in your list!

E.g. To step through a mysterious portal into a new world you need several things: curiosity, bravery, nerves of steel, determination and a way back.

### Sick sentences!

These sentences are 'sick' and need help to get better. Can you help?

She saw the circles in the forest. As she stepped through the circle she felt scared.

### Perfect picture!

Imagine you have stepped through the circles and have been taken to a new place. Draw or describe what you can see.