

# Year 3 & 4 – Science

**Focus Question**  
What makes things move?

## Forces - Lesson 1

For this lesson you will need: a balloon, rock, feather, piece of paper (workbooks) and a pencil



Understand **what forces are** and  
Investigate how **push and pull** gets an object **moving** or keeps it **still**



- Know what a force is
- Investigate how a balloon, rock & feather is affected by different forces
- Explain the forces at work in different sports and activities



- We use forces all the time
- Forces happen around us on a daily basis, and it's important to understand how we function in our world with the use of forces



# What makes things move?

Describe what the basketballer is doing. Is he pushing, pulling or both?

## Vocabulary

force   movement   science   push   pull   twist   action  
predict   observe   direction   shape   touch   distance  
tension   contact

<https://www.youtube.com/embed/KGLFK0I6-mk>



# What makes things move?



Describe what the basketballer is doing. Is he pushing, pulling or both?

## Vocabulary

force movement science push pull twist action  
predict observe direction shape touch distance  
tension contact



Scientists wonder **how** something happens. Think, pair and share your thoughts about the questions below and predict what the answers may be.

- How many different ways can you move a balloon?
- How will you change its speed or direction?
- Can you change its shape? How?

You will need:

- One inflated balloon for each student or group.



force   movement   science   push   pull   twist   action  
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You will use balloon to investigate the questions and find out if their predictions were correct. Record the results of your investigation about how they made it move, changed its speed, direction and shape.

You will need:

- One inflated balloon for each student or group.



Use a balloon to investigate the questions and find out if your predictions were correct. Record the results of your investigation.

I made it move by ...

I changed its speed and direction by ...

I changed its shape by ...





Use a balloon to investigate the questions and find out if your predictions were correct. Record the results of your investigation.

I made it move by ...

Example:

hitting it  
pushing it  
pulling it  
blowing it  
bouncing it  
rolling it

I changed its speed  
and direction by ...

hitting it harder  
tapping it another way

I changed its shape by ...

squeezing it  
deflating it



- All forces are either a push or a pull. A strike, flick or kick can push an object; a tug or stretch can pull something.
- Any living or nonliving thing can apply a force to another thing.



Imagine if the object you were investigating was a rock.  
Discuss how and why your results would have been different.



### Possible answers

- Much harder to push & pull
- A lot of force needed to change speed /directions
- Would be hard to change rock's shape
- You could roll the rock



Imagine if the object was a feather.  
Discuss how and why your results would have been different.



### Possible answers

- Easier to push & pull
- Less force needed to change the feathers speed
- Harder to control it's directions
- You could blow the feather easily
- You could not roll the feather



View this video: [Sporting Chumpions](https://www.inquisitive.com/video/1420-sporting-chumpions)

OR Type this URL directly  
into your browser

<https://www.inquisitive.com/video/1420-sporting-chumpions>

Share your thoughts with an adult/teacher/peer about the different forces you saw in action in the video.



**Sporting Chumpions**  
4 minutes

During the video, take note the forces that you saw happening in each sport, as the next task involves you drawing & labelling the forces at work.





Now, choose 3 scenes from the video to draw and label the forces that you saw happening in each.

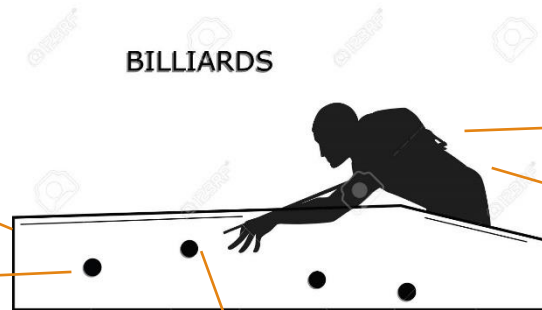


*Do this in your workbooks or on a piece of paper.*

Here is ONE 'worked example' for you, to show you what to strive towards:

5. The ball **gets pushed into** a hole  
Once the ball enters the hole 'pocket' it is **pulled down** by gravity into the bottom of the pocket

4. The ball **strikes (pushes)** another ball  
The force is not quite as big  
The speed is not quite as fast



1. The player **pulls** his arm back with the pool cue in his hand  
Only a **little force** is needed  
Only a **slow** speed is created

2. The player **pushes** his arm forward with the pool cue in his hand  
A **big force** is needed  
A **fast** speed is created

3. The pool cue **strikes (pushes)** the ball  
A **very big force** is needed to make the ball go fast  
A **fast** speed is created



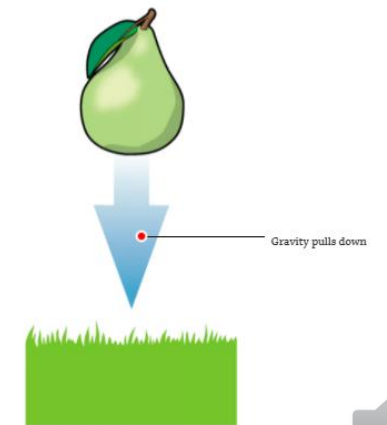
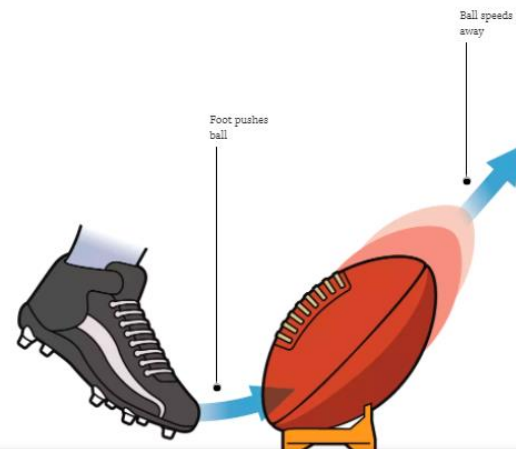
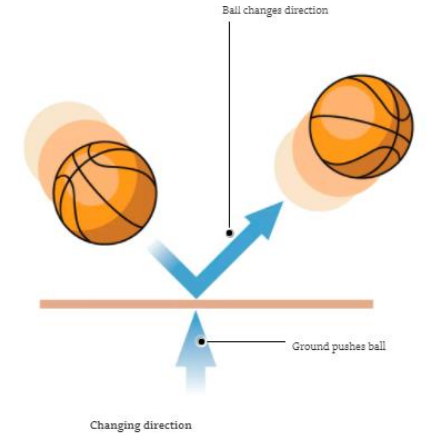
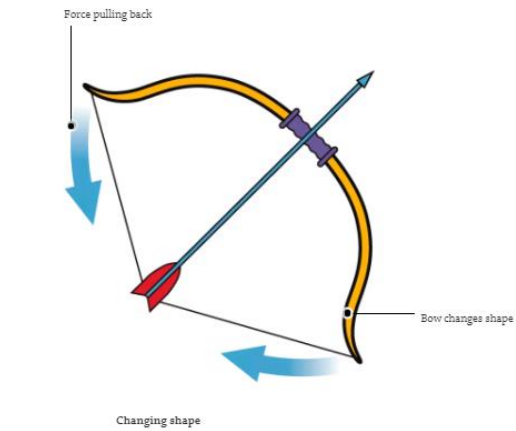
# Additional Task / Extension:

Click on the weblink ['What is a Force'](https://www.dkfindout.com/us/science/forces-and-motion/what-is-force/)  
Type this URL directly into your browser

<https://www.dkfindout.com/us/science/forces-and-motion/what-is-force/>

## What is a force?

A force is a push or a pull. When the wind pushes a sailboat through the water, it is exerting a force. When gravity pulls an apple toward the ground, that is a force as well. Forces can make things move, change their speed, or change their shape. Some forces act when two things touch—for example, when a person kicks a soccer ball. Other forces act over a distance, such as the pull of gravity, or a magnet pulling a piece of metal.



End of Lesson 1 of Science

