

Materials:

Round coaster (cork)
Table

Method

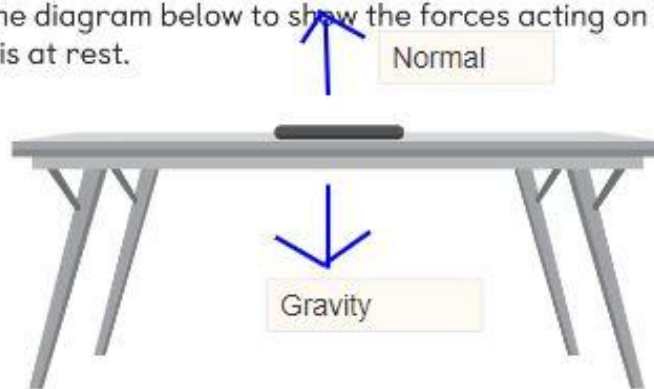
- 1 Spin the round coaster on the table.
- 2 Observe the coaster until it stops spinning.
 - a Why do you think the coaster stops spinning?

The force of gravity becomes greater than the other forces acting on the coaster

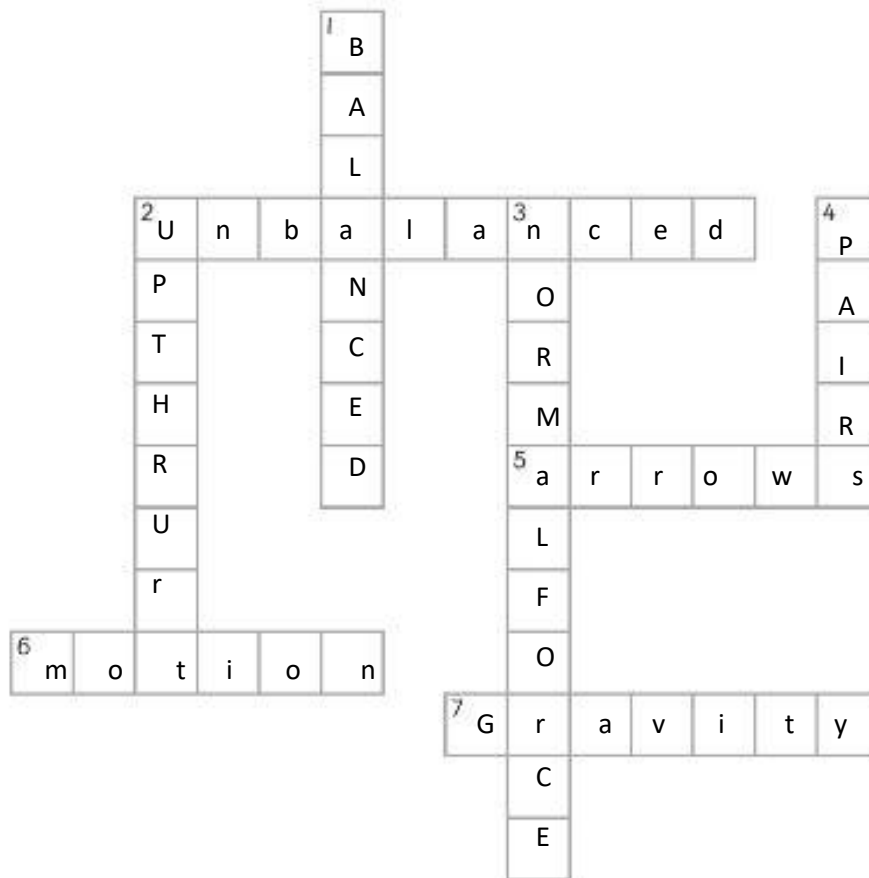
- b Which forces are acting on the coaster when it is spinning?

Gravity , Normal , applied , air resistance , friction.

- c Label the diagram below to show the forces acting on the coaster while it is at rest.



Complete the crossword puzzle using the clues.



Across

- 2 _____ forces are two opposing forces with unequal sizes.
- 5 In a force diagram, _____ represent the forces acting on an object.
- 6 Unbalanced forces can put an object at rest into _____.
- 7 _____ is the force that pulls objects towards the centre of the Earth.

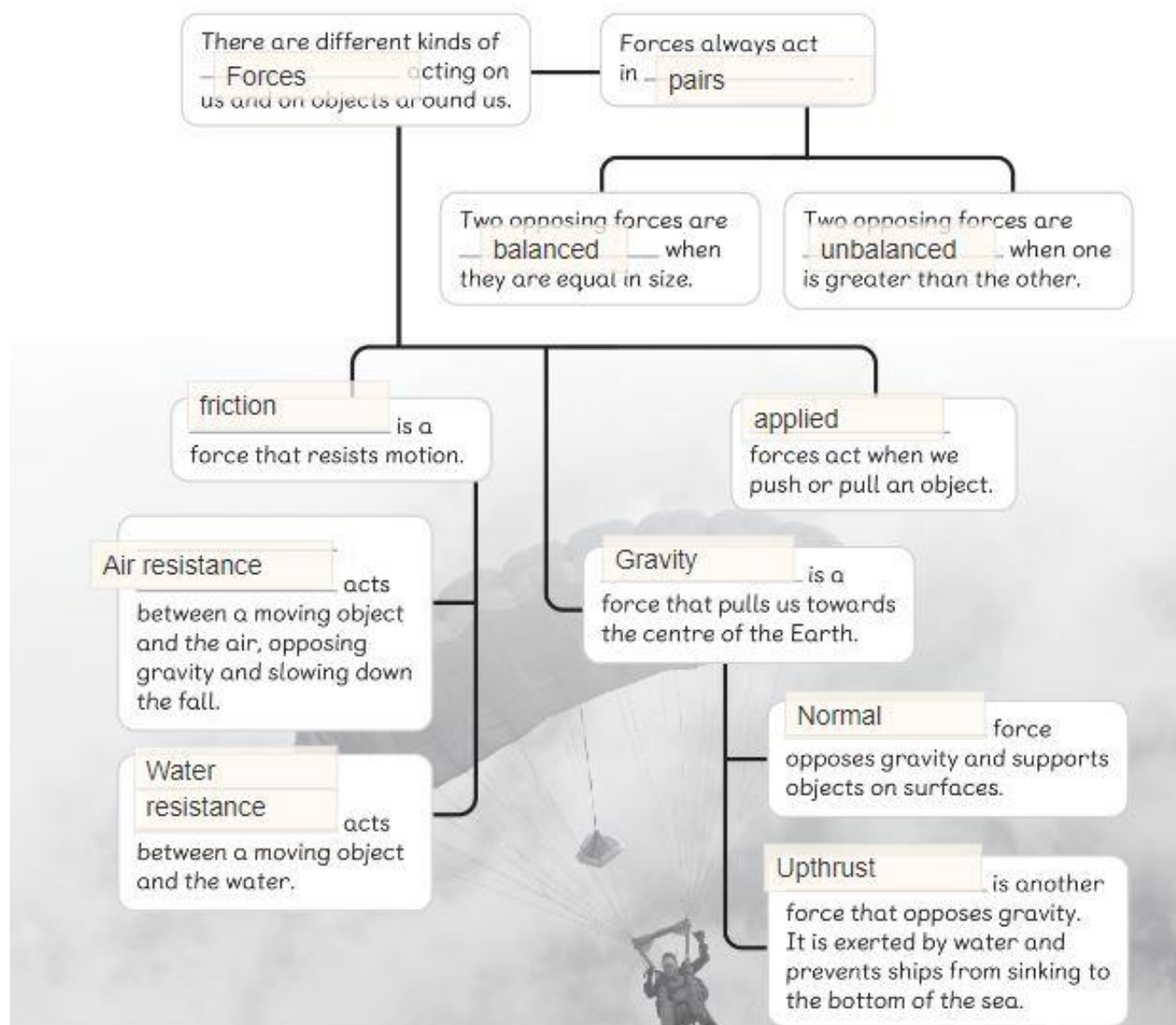
Down

- 1 _____ forces are two opposing forces with an equal size.
- 2 _____ is the force exerted by the water to prevent an object from sinking to the bottom of the sea.
- 3 _____ supports an object on a surface. (two words)
- 4 Forces always act in _____ and in opposite directions.

Let's Map It!

Fill in the blanks. Use the following words.

air resistance applied balanced forces
friction gravity normal pairs
unbalanced upthrust water resistance



Let's Review

- 1 A teacher asks some students to name the force that acts in the opposite direction of motion when two surfaces come in contact.

Gerry says that it is gravity.

Lyn says that it is friction.

Jessica says that it is upthrust.

Who is correct?

- 2 Annista and Ali sit on a see-saw, but it stays stationary.

- a Explain why the see-saw does not move.

- b Use arrows and labels to show the names and directions of forces acting on them.



- 3 Name **two** forces that act in opposite directions.

and

- 4 An aeroplane is able to take off and stay in the air. Explain how different forces work to make this happen.



Thrust force acts on the plane to make it move forward , Air resistance acts on the opposite direction of motion, Gravity acts downward while the wings apply an upward force to make it fly upward.

- 5 A flying squirrel has a membrane attached from its wrists to its ankles. This allows it to glide through the air. How does the membrane help the squirrel to glide?



The membrane acts like a parachute for the flying squirrel. It provides a larger surface area , allowing it to experience greater air resistance, it lowers its speed , allowing it to glide.