FORCES AND MACHINES



1. Look at the pictures and select the correct option.

When you apply force, a fencing foil changes its shape...



When you apply force, what change occurs with the clay?



When you apply force, the shape of a rubber duck...



Can you temporarily change the shape of a wooden board?



2. What is the name of the forces that slow down these moving objects?

a. A fish swimming in a pond:

b. A car travelling on a road:

c. A bird flying in the sky:



3. Read these two questions and select the true statement for each of them.

A ball is sitting at rest in the grass. Why isn't it moving?

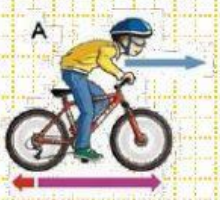
- A: Because no force is causing it to move.
- B: Because the force of friction keeps it fixed in the grass.
- C: Because the grass applies a force on it.

You are riding your bike and you stop pedalling. What will happen?

- A: The bike will stop instantly. This is because of different forces: there is friction between the bike wheels and the ground; and there is air resistance pushing against the bike and your body.
- B: The bike will slow down until it stops. This is because of different forces: there is friction between the bike wheels and the ground; and there is air resistance pushing against the bike and your body.
- C: The bike will keep going faster and faster. This is because the force of friction makes its speed increase and the force of air resistance lower.

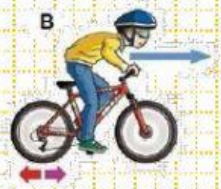
4. Look at the two pictures and choose the correct answers.

1. Which of these two cyclists is increasing its speed?



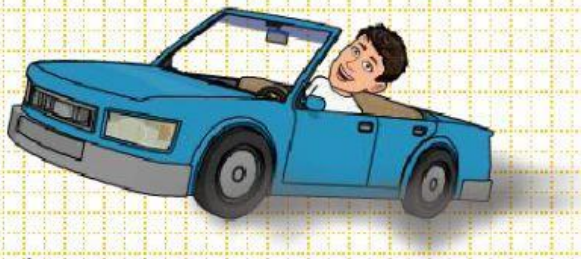
- A. A
- B. B
- C. Neither of them

2. Which one is keeping a constant speed?



- A. A
- B. B
- C. Neither of them

3. In a race, which one will arrive first at the finish line?



- A. A
- B. B
- C. They will both arrive at the same time

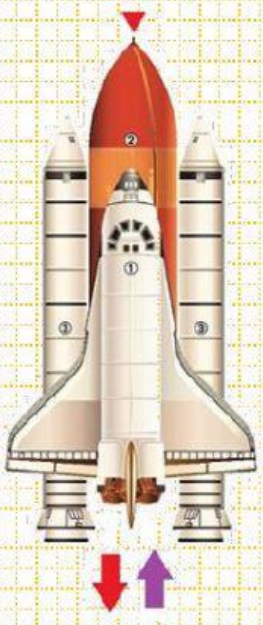
5. Look at the space shuttle and choose the correct answers.

What forces do the red arrows represent?

Which forces are they?

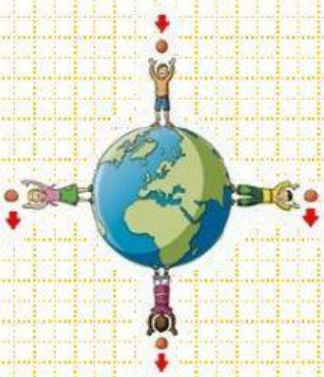
What would happen if the purple force was weaker than the red force?

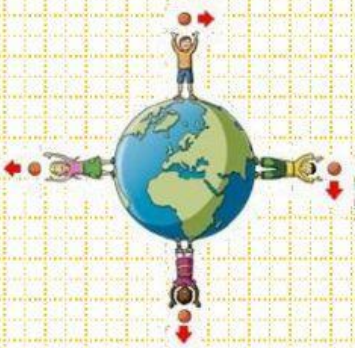
Which force must be overcome so that the shuttle can take off?

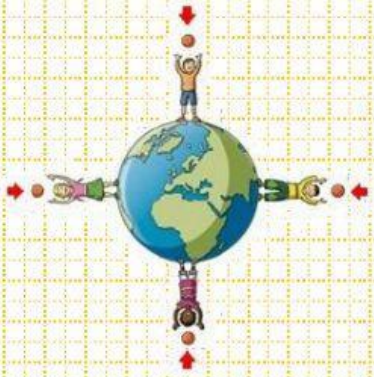




6. **Choose the picture that represents where the balls will fall.**







7. **If Laura travels 24 kilometres in two hours on her bike, what is her speed per hour?**

And if she travels the same distance in three hours?

