

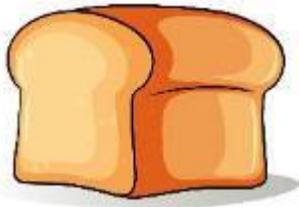
1 Here is an old type of bicycle called a penny farthing. When it is being ridden along which statement is true?

- A: both wheels are going round at the same speed
- B: the front wheel is going faster than the back wheel
- C: the back wheel is going faster than the front wheel



The perimeter or circumference of the small wheel is less. For every 100 metres you ride, the little wheel has to rotate more times than the large wheel

2



If you make bread from flour, yeast, water and a little oil some recipes suggest adding some sugar. Why do you think this is?

- A: so it tastes nicer
- B: so the bread rises more
- C: so you get more energy from eating it

B is the best answer – yeast makes bread dough rise because it feeds on sugar and produces bubbles of carbon dioxide gas. Look at a slice of bread and you can see holes where the bubbles used to be!

A bus uses much more fuel than a car. Why are busses better for the environment than cars?

3

- A: they make following traffic go slower
- B: a bus carrying 20 people uses less fuel than 20 cars carrying one person
- C: we don't need so many car parks so we have more space for gardens



The best answer is B. In fact C is very relevant too. In cities, new buildings including schools, are being created with no car parking spaces but better public transport and more spaces to lock up bicycles.

4. An ant is sitting on a bicycle wheel. Inside the rim, not on the tyre so he won't get squashed! As the bike goes along which is true:

- A: the ant goes further than the rider
 B: the ant and the rider go the same distance

The ant has to go round and round as well as along the road on a spiral shaped path, the rider just goes along the road.



5. On sailing ships there was a look out positioned up a mast in the crow's nest. Why was this crow's nest at the top of the mast?

- A: So the horizon became farther away for the sailor in the crow's nest
 B: So the sailor could see the curvature of the Earth
 C: So the sailor would be out of harm's way

A person called Thales worked out that the higher above the sea you are, the further you can see before things are hidden behind the horizon. (About 600BC) From up there, the look out would see another ship or land before the rest of the crew.

6. Look at a central heating radiator. They usually have ridges and "dents" on them. Why?

- A: it makes it easier to throw it in a skip when it's worn out
 B: It has a larger surface area so it can heat the room better
 C: it makes a great noise when you run your finger along it



B is the best answer. I have found from experience that A and C are also correct though!