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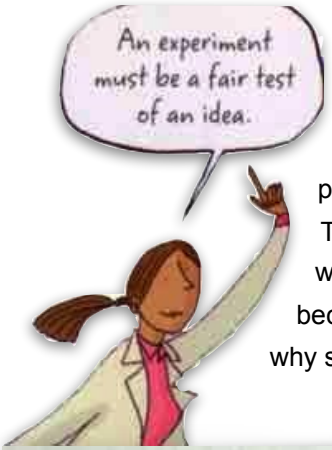
HOW DOES BIOLOGY WORK ?

Biologists (and all other kinds of scientists too) come up with ideas that explain something about *the* world. They base those ideas on *things* they've seen or that other biologists have written about.



Then they have to see if their ideas are right. To be a real scientist, it isn't enough to say that what you *think* is true, or that you believe it, or that *it's* common *sense.* You have to *prove it's* right (or at least, not wrong), by doing experiments that back it up. When an idea can be tested through experiments, *it's* called a hypothesis (unlike *the* many ideas people have which cant be tested scientifically).

Top scientists write about their experiments in journals, so other scientists around the world can try them too. If other *experts* agree there is enough evidence, the hypothesis becomes a **theory -** that means, *it's* the accepted, *tested* and *most* likely explanation of why something *is* the way it is.

A sample of a simple scientific method :

1. Hypothesis
'Plants need water to live. Without water, a plant will die.'

2. Method
Take two plants, and label them A and B. Make sure they're the same kind of plant, get the same amount of light and all other conditions are the same. For two weeks, water plant A (the control, or normal situation), but don't water plant B.

3. Results
Plant A is healthy. Plant B has wilted and died.

4. Conclusion
The only difference between the plants was that one was watered, and one wasn't. So plant B probably died because it didn't have any water. This result supports the hypothesis.

Are *scientists* ever wrong ?

YES, scientists get things wrong all *the* time ! They may misinterpret experiments. get bad results or not be able to *test* ideas until the right technology is invented.

But what every good scientist wants most of all is to discover **how things really work** - even if that means admitting to mistakes along the way. So if their ideas are proved wrong, they're always prepared to change what they think, and move on.

However, there might be reasons why *this* experiment wouldn't work. The control (plant A) might have a disease and die too or if *it's used* to dry conditions, it might die from being over-watered. SO, to get reliable results it's best to try the experiment many times with lots of different plants.

Vocabulary : Back it up : le confirmer (si verbe transitif (comme ici) ; sample = example : exemple ; amount : quantité ; healthy : en bonne santé ; To misinterpret : mal interpréter, prendre à contre sens.