

Test a Bee's Memory



You will need a parent or trusted adult to help you with this activity !

Honey bees feed on both nectar and pollen. The nectar is for energy and the pollen provides protein and other nutrients. They find their food through sight and smell. In fact honey bees have 170 odorant receptors which means they have a very strong sense of smell!

They can't see colours like humans can, but they can tell the difference between colours, patterns, and even ultraviolet light. They can see brightly coloured flowers which makes finding sweet nectar easy. And once a honey bee associates something with food, it's likely to return.

In this experiment you're going to test how great bees are at remembering where it can find food.

With the help of an adult, gather the following items:

- Pan or microwave-safe dish
- Water
- 50g sugar
- 5 clear dishes
- 4 pieces of white paper
- 1 piece of red paper



Prepare the nectar for the bees: by heating the sugar with 200ml of water until the sugar is completely dissolved. Set aside to cool.

Find a spot outside where bees can find the nectar and water. Set the four pieces of white paper and the red paper in a row in this spot. Fill the four clear dishes with water and place them on top of white paper. Fill the last dish with the nectar that you prepared and place it on top of your red paper.

Over the next few days, watch to see if bees come to the dishes.

Which one do they fly to first?

Now it's time to test the bees' memory: after 2 days of seeing the bees at the sugar-water dish, move the dish (when there are no bees feeding) - along with its red card - to another spot. Do the bees follow it? (Circle yes or no)



After a few hours when the bees have left, switch cards so that the red card is now under a dish of plain water. What happens in the next two days?

Now leave the cards where they are but switch the sugar-water dish with another dish of plain water with white paper beneath. How do the bees respond?
