Bee Pollination Game

Ingredients & Supplies

- Bee Pollination Card
- Plastic bowl
- Measuring cups
- Salt
- Glitter
- Glue stick
- Helium quality balloons (1 per player)
- Beehive Card (1 per player)

What is black and yellow, loves flowers, and buzzes? Can you guess this little insect? The answer is BEES!! Bees are small insects that are vital to the *pollination* of vegetables, flowers, and fruits. *Pollination* is the way pollen from a flower gets from the *stamen* to the *pistil* of the flower. This *fertilization* process forms a seed.

Instructions:

You can play a game with friends to simulate how bees pollinate flowers. Each player will need a Beehive Card. Ask an adult to print out the Beehive Cards for your game. Look at your Beehive Card. It has a picture of a Beehive with six-sided cells.

You will need one plastic bowl. Measure ½ cup salt. Pour the salt in the bowl. Now measure ½ cup of glitter. Pour the glitter into the same bowl with the salt. Gently stir. For this game, the glitter and salt mixture is the pollen.

Everyone needs one balloon. Blow up your balloon. Tie the end of the balloon. (Ask an adult to help blow up the balloons, if needed.)

You will need 1 glue stick. Take your glue stick and rub it onto the Beehive Card. Now rub the balloon on your head. This will create static electricity on the balloon. Next, place the balloon above the bowl of “pollen”. Do not let go of the balloon. Keep it very close to the bowl, and watch as the salt and glitter jump onto your balloon. The bee (or balloon) is attracting the pollen! Buzz like a bee as you collect pollen from the bowl. . . BZZZZZZZZZZ…

Next, take your balloon, and place it over your Beehive Card. Carefully knock the side of the balloon. Watch as the pollen lands on your hive! How much pollen did you collect?

Now the next player can try their balloon and gather nectar for the glitter beehive. How much nectar did this player get? Did they collect more pollen? Compare your beehives. Who collected more pollen? Do the beehives look similar or different?

Keep collecting pollen so that you have transferred it to your hive. Can you collect all of the pollen for your beehive? You want to make the queen really happy!

The Science Behind It:

Bees are *pollinators* and live off the nectar from plants. These insects are attracted to the bright colors and sweet smell of flowers and vegetables. When the bees land on the petals, the plants pollen sticks to their bodies. The bees move from plant to plant carrying the pollen. The pollen is transferred to the other plants and moves down to the plants' eggs. Once the pollen meets the eggs, a seed is formed. This is called *fertilization.* These seeds will create new plants.

Bees are very important to the plants, but bees also greatly benefit from the pollen, too! Bees eat nectar while they visit each flower. They also collect nectar from each flower and put it in a special sack, called a pollen basket, attached to its hind legs. In this sack, the nectar reacts to special enzymes. This reaction begins the process of turning the nectar into honey. The bees bring this sugary-nectar back to their hive and pass it to another worker bee. This bee continues the job by placing the nectar in a beeswax comb. The bees produce this wax through secretions from the nectar. The nectar sits in the beeswax comb and slowly forms into honey.

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Real World Relevance – Vanishing Bees

Bees are extremely important to the success of crops, such as vegetables and flowers. Farmers rely on bees to help pollinate their crops every year. However, the bees are vanishing! In fact, up to one-third of the commercial honeybees have disappeared. This is a huge problem for all of the yummy vegetables and fruits we eat each year! Scientists are actively studying this phenomenon, called *colony collapse disorder,* to learn more about this problem

Although colony collapse disorder still remains a mystery, scientists have found that bees may be vanishing worldwide due to pesticides, pollution, parasites and infections. Parasites sometimes infiltrate the beehive. This invasion weakens the hard-working bees. Infections can kill the bees before they build a successful beehive. Some scientists believe that pesticides can harm the bees neurological system. This affects their brains and can confuse the bees. Those affected may get lost while they are out gathering nectar. If the bees get lost and cannot find their hive, the honeycomb will not produce honey!

Scientists continue to study the case of the vanishing bees. Many people are helping the cause by maintaining their own beehives. If we can protect the busy bees, we will encourage the healthy growth of our vegetables, fruits, and flowers.

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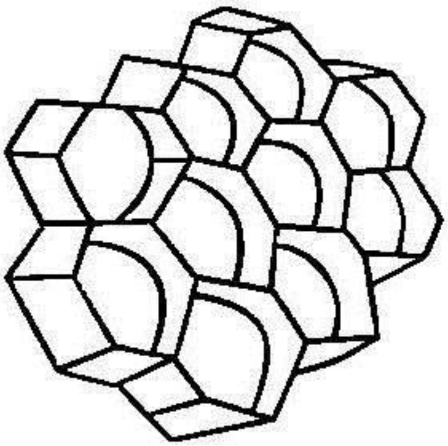

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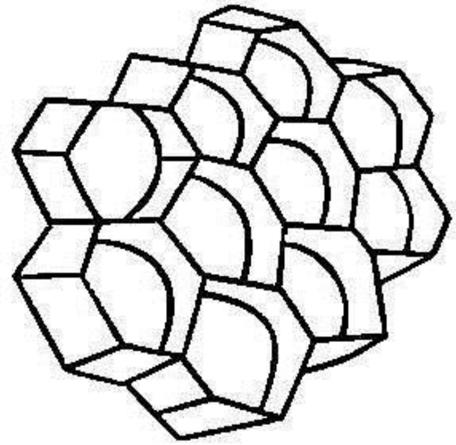

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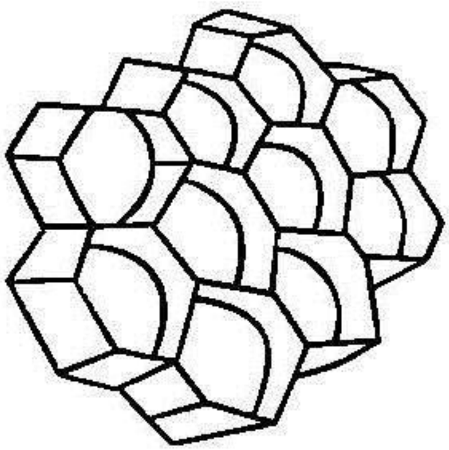

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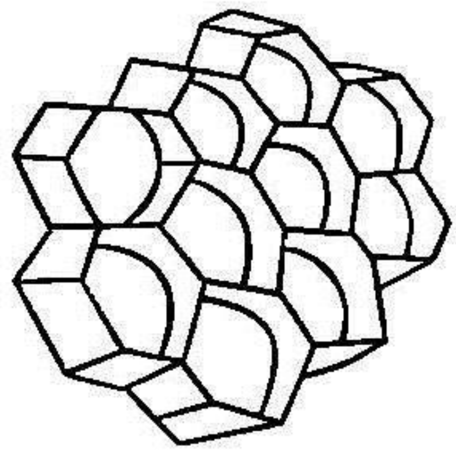

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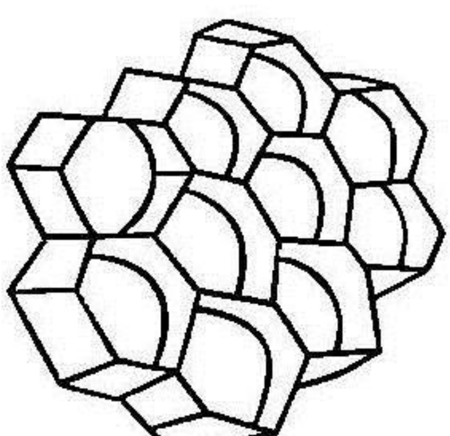

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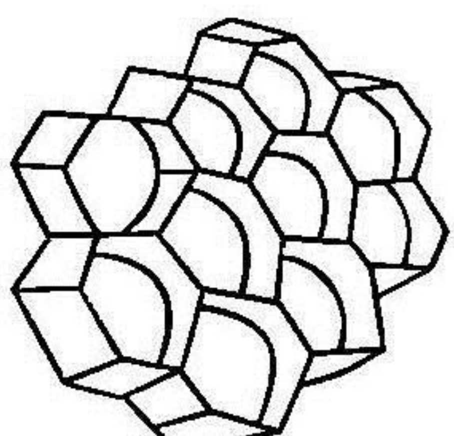

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