



# NECTAR EXPERIMENT AND PROGRAMMING

Grade K-3/4-8



## HONEY BEE AND NECTAR EXPERIMENT AND PROGRAMMING

K-3 Students will work together as honey bees to collect nectar and bring it back to their hive

4-8 Students will program the robots.

### NAMASTE!

5 min

#### Namaste is Hindi for hello!

Greet your students. Be friendly. Use their name, ask a question, give a high five, or thumbs-up! Take roll. Mark down which students took a snack and tally how many snacks were given out.

### SNACK / FREEPLAY

30 min

#### Enjoy Free Play:

Students will have their snack and enjoy time to free play.

### STORY TIME

15 min

#### Read the story:

Read the story of the day. Older students may choose to read their own books.

### STEM TIME

50 min

#### Grades K-3: Bird Observation and Nectar Experiment

Students will observe the birds at their bird feeders, and then do a honey bee nectar experiment.

#### Instructions: Bird Observation

**Say-** "Today we're going outside to observe the birds at our birdfeeders and record what we find!" Have each student bring a paper, pencil, and clipboard with them outside. Allow them to take 15 minutes or so to make and record observations of the birds visiting their bird feeders.

**Ask:** "Do you notice any new features on the birds you see?"

"What are some of their behaviors?"

"How many species of birds are there?"

#### Instructions: Nectar Experiment

**Say-** "Today we're going outside to do a nectar collecting experiment! Bees work hard to collect and bring pollen and nectar from flowers back to their hive. Bees travel long distances to collect nectar from flowers. Bees typically travel up to 2 miles (3 kilometers) from their hive to collect nectar. They have been know to explore up to 16 miles (25 kilometers) from their hive. Bees can visit between 50 and 100 flowers during one nectar collection trip. The nectar is used to make honey which they eat. The nectar and pollen they collect is stored in the honeycomb which they make using wax that comes from glands on their bellies.

Today you will get to pretend to be a honey bee. You can run around the school yard with Pippi pipette to collect water and bring it back to our pretend hive. I will place water stations around the schoolyard and you can pretend they are flowers full of sweet nectar. You can zoom around like a busy bee to collect nectar to bring back to your hive. You will see what it is like to be a hard working honey bee!

#### Materials:

- Pippy Pipettes
- Water
- Containers/Pitchers



**STEM TIME  
CONTINUED...**

50 min

**4-8 Materials:**

- Chromebooks
- Robots
- Legos

**SPORTS / GAMES**

25 min

\*Older students may practice their sport if they don't want to play the game.

**Materials:**

- Cup, Pippy Pipette, and bucket of water  
or
- Sponge and bucket of water

**HOMEWORK /  
FREE PLAY**

20 min

**CLEAN UP**

5 min

1. The STEM Coach will place a pitcher or an empty container at the starting point (the hive), and a container filled with water far from the starting point.
2. The students will each get one pipette which they will use to collect the "nectar."
3. The whole class will contribute to filling the pitcher. The students will run back and forth across the schoolyard in to collect water with their pipette and bring it back to the hive until it is filled.

Ask: "What was it like to be a honeybee?" "Was it tiring?" "Can you see how hard bees work to make honey?"

**Grades 4-8: Program your robots**

**Instructions:**

STEM Coaches will go to the portal and help students with the next Edison programming lesson they are on. Students may choose to build a Lego creation on top of their robots.

Link to portal: <https://www.stemexpandedlearning.com/robotics>

**Bumble Bee, Bumble Bee, Honey Bee**

Objective- This game is a version of Drip, Drip, Drench. The student who is "It" is the honey bee. The honey bee will walk around the circle dripping a drop of water on each player's head until one student is chosen to drench with the remaining water. This student tries to tag the honey bee to avoid becoming the next honey bee.

Instructions- Depending on group size, students may be organized into two or more groups. Students will sit in a circle facing each other. One student will be chosen to be the honey bee. This person is "It." The honey bee will be given either a sponge full of water, or a cup ¼ full of water and a Pippy Pipette. There will be a bucket of water off to the side to refill the sponge or cup for each round. The honey bee will then walk around the circle dripping a drop of water, pretending it is their honey, on each player's head. The honey bee will then choose to drop the remaining "honey" on one of the players in the circle. This player will then chase the honey bee, and try to tag them to avoid becoming the new honey bee. If the player tags the honey bee, they have the option of drenching them with "honey!" If the honey bee is able to run around the circle and sit in the open spot before getting tagged, the chaser becomes the new honey bee, and they will fill the sponge or cup. The game will continue in this pattern.

**Instructions:**

Allow your students some homework time. If they need help let them know you can help them. If they do not have any homework they can have some reading time, or they can have free time to go outside and play.

**Clean up/pack up/dismissal**

Clean up, pack up and practice lining up.