How Busy Are Bees?

LEVEL: Grades K-3
SUBJECTS: Language Arts, Science, Math
AZ ACADEMIC STANDARDS: LS-R2, LS-R5, LS-F1, LS-F2, 1AV-R2, 1AV-F1, 1AV-F2, 1AV-F4, SC00-1C1, SC00-S1C3

MATERIALS
bee pattern, yarn, six clothes pins

VOCABULARY
colony, hive, cells, worker bee, drone bee, queen bee, timeline, job-house bee, beginning and advanced nurse bee, wax bee, guard bee, and forager bee.

RELATED LESSONS
Buzzing Bees Wardrobe
Do the Honeybee Dance!
Those Busy Buzz’n Worker Bees
To Bee or Not to Bee

SUPPORTING INFORMATION
Honeybees live in colonies and are social insects. Within each colony there are worker bees, drones, and the largest of the honeybee - a queen. She can live from three to five years. The queen’s job is to lay up to 3,000 eggs a day. The male members of the colony, the drones, exist only to mate with the queen. Drone and worker bees live for about two months, except over winter, when they live a few months longer. Most of the adult honeybees in the colony are female worker bees that tend the young, gather and store nectar and pollen, make honey, royal jelly and beebread, produce wax, and care for the queen and the drones. Each bee, guided by an inner clock, does certain chores as it reaches a certain age.

ESTIMATED TEACHING TIME
1 class period (45 minutes)

BRIEF DESCRIPTION
Use a timeline activity to illustrate the different duties typical worker bees perform throughout their lives.

PROCEDURES
1. Ask students if they have ever heard the term busy as a bee?
2. Explain to students that worker bees are always busy and they change jobs many times during their six week life span.
3. Read the job descriptions aloud and have student volunteers use clothes pins to hang each bee in sequential order along the timeline. (Most of the adult honeybees in the colony are female worker bees that tend the young, gather and store nectar and pollen, make honey, royal jelly and beebread, produce wax, and care for the queen and the drones.)

A Worker Bee’s Busy Life
PROCEDURES (cont’d)
Days 1 - 2
House Bees - clean the empty cells in the hive so they can be reused
Days 3 - 5
Beginning Nurse Bees - feed the worker larvae bee bread made of pollen and honey
Days 6 - 11
Advanced Nurse Bees - feed royal jelly to the queen larva and bee milk to the drone and worker larvae
Days 12 - 17
Wax Bees - build cells from wax, repair old cells, and store nectar and pollen brought in by other workers
Days 18 - 21
Guard Bees - protect the entrance of the hive from enemies
Days 22 - 42
Forager Bees - fly from flower to flower gathering nectar and pollen
4. When the timeline is complete, invite students to take turns retelling the job descriptions for each phase of the worker bee’s life.

EVALUATION OPTIONS
1. Evaluate the thoroughness of students’ completion of the timeline.
   - Does the student understand the hierarchy of jobs?
   - Is the student capable of putting each duty on a separate length of time?
2. Ask students to list three duties of a Guard Bee.
3. Assign small groups to illustrate this same timeline in another format, such as circular.

EXTENSIONS AND VARIATIONS
Assign small groups to act out a given duty. For example, a group of four students act the advanced nurse bee duties. Using construction paper, markers, yarn, and pipe cleaners, students make props and costumes to assume their role. Without telling their peers, students act out their duty while the rest of the class decides on the correct duty title.

RESOURCES
Insects: Mailbox Grades 1 - 3, Published by The Education Center, Inc., NC, 2000.
National Honey Board. 390 Lashley Street, Longmont, CO 80501-6045; www.honey.com

EDUCATORS’ NOTES
This Arizona Grown Specialty Crop Lesson Plan was paid for by a grant from the Arizona Department of Agriculture’s Office of Marketing and Outreach.
HOW BUSY ARE BEES?
BEE PATTERN