

Be the Bee Game
Audience: 3rd-6th grade
Minimum: 10 kids

10 min intro. 15 min activity. 2-5 min summarize.

A. Set-up:

- a. Food pictures: in color, photos of foods bees do and do not pollinate
- b. Yes-No signs: print; tape to wall, column, etc. somewhere the kids can see
- c. Predator/ Stressor signs: print; pair with binder clip (easy to clip on kid's shirt).
- d. Paper plates: between 10-20 plates (you can decorate as necessary- tissue paper, markers, paint, etc.) to look like various, diverse flowers
- e. "Pollen balls": small balloons, styrofoam balls, anything round with various colors and sizes works great.
- f. "Wings": flag football belt, burlap/fabric cut into strips- something the kids can wear as bee wings and pull instead of tagging. Each kid gets 2- one on each side of their pants.
- g. Acceptance- that everything is going to get stomped on and crinked ;)

B. Introduction

- a. Food pictures: what is pollination and what bees pollinate
- b. **Activity:** Yes- No (tape on wall). Hold up pictures of food and have kids move to whether they think "YES" or "NO" bees/insects pollinate it.

C. HOW pollination works

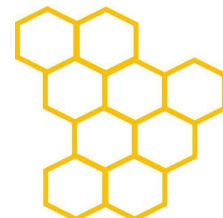
- a. Display of pollination (picture/diagram):
- b. Floral types
- c. Different pollen grains: incorporate pollen used in game (balloons v. foam ball)
- d. How bees carry pollen: thighs and stomach pollen sacs (balloons static to hair/ clothes similar to pollen sacs on bees' head/thighs- carry unlimited balloons. Foam balls- only can carry 2 at a time, 1 in each hand- like limited resources/ carrying capacity)

D. Stressors/ Impact on bees

- a. Mites, disease, pesticides, extreme temperatures
- b. Predation: spider, wasp, bird, etc.

E. **Activity**

- a. Set up:
 - i. 2 competing hives- bucket to hold pollen (consider not splitting the hive later in the game-- reflects advantage of numbers, role of honey bees as superorganism)
 - ii. Flowers distributed in patches & spaced with pollen balls in middle
 - iii. Flowers and hives are "safe zones" in some cases
 - iv. Predators/stressors assigned & given role card. Pin on. (Ex: Round 1: 3 predators. Round 2: 9 predators). Increase each round.
 1. Spider: can pull bee wings when on the flowers (not the hive) but must move while squatting (simulates spiders slow movements and predation around flowers)
 2. Mite: sit down by the hive
 3. Bird: fly around (run)- but cannot pull bee wings when bees touching flower/ hive



4. Wasp: fly around (run)- but cannot pull bee wings when bees touching flower/ hive
5. 3x Pesticide (insecticide, fungicide, herbicide): link arms and walk (slow but devastating). Can TAG (dont have to pull wing) on hive and flower. Anyone tagged joins arms with the mob. Can incorporate how chemicals kill without discrimination: can also tag predators!
6. Disease: walk. Can tag bees on flowers & hive
7. Extreme temperatures (hot-cold): walk. Can TAG-- causes bees to walk (they don't necessary die from extreme temps, but are slowed down thus leaving susceptible to other predators/ stressors)

F. Post- Activity Discussion

- a. Count pollen: competition and diversity of pollen types
- b. Impact of spaced flowers: importance of habitat & corridors
- c. Impact of stressors
- d. Moving pollen in their "pollen sacs": speciation
- e. Floral types: speciation to attract certain pollinators

G. What you can do to help

- a. Plant native species with various seasons
- b. Don't use chemicals (insecticide, fungicides or herbicides)
- c. Prevent invasive species

