

# Waggle Dance



## What Is This Activity?

**How do busy bees “tell” each other where to find pollen?** In this game, families play bees that find pollen by doing a dance.

### Learning Goals

#### Big Science Idea:

- Bees and flowers depend on each other to survive and thrive.

#### Skills kids will use to investigate it:

- Model how bees communicate to find and collect pollen from flowers
- Communicate strategies flowers use to attract bees for pollination
- Communicate how bees and flowers depend on each other for survival

### How Do You Get Ready?

- Read the activity and gather the materials.
- Stick the 24 sticky notes inside the six bowls in uneven numbers—e.g., four in one bowl, seven in another, etc.
- Scout out an outdoor area that has trees, flowers, benches, and other places to hide objects, like a local park or your program’s backyard.
- Troubleshoot safety concerns (traffic, poison ivy, sharp objects, etc.).
- Place the six bowls all around the outer edges of the play area and the two plates in the center.
- Copy or print the “Waggle Dance” handout (one per family).
- If you don’t plan to show the “The Brick-Eating Ivy Mystery” video that is paired with this activity on the website, watch it ahead of time and jot down concepts to share with families during the activity.



[pbskids.org/plumlanding/parents](https://pbskids.org/plumlanding/parents)

### Curriculum Topics

animals, communication, ecosystems

### Activity Type

outdoor (non-rainy day preferably when flowers are in bloom)

### Group Size

whole group, small groups

### Activity Time

40–60 minutes

### Materials

- 24 mini yellow sticky notes (or substitute cotton balls or scraps of construction paper)
- 6 bowls or other small containers
- 2 paper plates labeled “Honey Hive” and “Sweet Bees”
- Colorful ribbon (one for each person, used for both Warm-Up and Activity)
- “Waggle Dance” handout (one per family)
- Optional: “Explore Animals Around You” handout

### Next Generation Science Standards

#### Disciplinary Core Ideas

LS1.A: Structure and Function  
LS1.D: Information Processing  
LS2.A: Interdependent Relationships in Ecosystems

#### Science and Engineering Practices

Asking Questions and Defining Problems  
Developing and Using Models  
Obtaining, Evaluating, and Communicating Information

#### Crosscutting Concepts

Cause and Effect: Mechanism and Prediction

## Warm-up (10-15 minutes)

(Science Skills: Model how bees collect pollen from flowers)

### Bee Race

- 1. In this team race game**, the six bowls are flowers full of “Pollen” (the yellow sticky notes). The two plates are “Flowers” that need Pollen to make seeds.
- 2. Ask a kid volunteer to play a “Bee-Eater Bird”** and give him or her a colored ribbon.
- 3. Divide the families into two hives of “Bees”:** the Honey Hive and the Sweet Bees.
- 4. All Bees start in the center.** The Bee-Eater Bird can “fly” anywhere except the center.
- 5. On your signal, the Bees start collecting one piece of Pollen at a time** from any bowl and sticking it to their team’s plate. (Ask an adult/parent to monitor this step. Invite the other adults to play; their kids will love it!)
- 6. The Bird tries to tag Bees with the ribbon.** Tagged Bees become Bee-Eater Birds. They take a ribbon from you and begin tagging Bees.
- 7. The race ends when the Pollen supply is gone, the last Bee turns into a Bird, or time is up.** The team with the most Pollen is the winner!
- 8. Ask:** *What helped you collect more pollen?* (Spread out to avoid the Bird, run fast, scout out rich pollen sources and tell your teammates, etc.) *Why do Bees collect pollen? Why do flowers make pollen?* Revisit these questions after the activity.

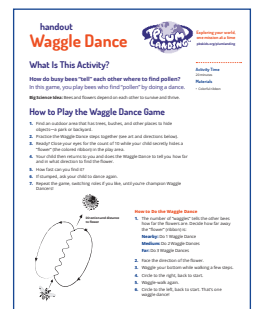
## Activity

### Waggle Dance (25-35 minutes)

(Science Skills: Model how bees communicate to find and collect pollen; Communicate strategies flowers use to attract bees for pollination)

- 1. Give the families a few minutes to look around at flowers, if they’re in season.** *What colors are the petals? Which blooms are scented? Is there pollen (a white, yellow, or brown powder, usually in the center)? Any bees? If you were a flower, how would you get bees to visit you?*
- 2. Explain that pollen is food for bees.** Bees find it by zeroing in on the color or scent of a flower. They collect what they can and then tell the bees back at the hive where to find it.
- 3. Wonder aloud:** *Bees can’t talk, so how do they “tell” the other bees where the pollen is?*
- 4. Pass out the ribbons** (one per family; the same one from the Warm-Up) and the “Waggle Dance” handout.
- 5. Review the activity and demonstrate the steps of the Waggle Dance.** **Have the families copy your moves.** Explain that the dance is a simplified version of how real bees communicate.
- 6. Have each family** follow the directions on the handout to play a Waggle Dance game. (You can also have two or more families waggle dance together.)
- 7. Circulate to support and encourage them.**

**Pollen**  
Pollen is protein for bees, which do not eat meat. Flower nectar is a sugary snack for short-term energy.



## Wrap-up (5-10 minutes)

(Science Skills: Communicate how bees and flowers depend on each other for survival; Communicate strategies flowers use to attract bees for pollination)

- **Wonder aloud again:** *Why do bees collect pollen? Why do flowers make food for bees? What's in it for them?* If needed, explain that some of the flower's pollen sticks to the bee and gets carried to another flower. *Then what?* (That flower uses pollen to make seeds, which can grow new flowers.)
- **Ask:** *How do bees and flowers depend on each other to survive?* (Bees would starve without pollen and nectar from flowers; flowers would die out without bees to help them make seeds.)
- **Role-play:** Ask everyone to stand perfectly still, like a flower. No one can move! No one can make a sound! **Ask:** *How could you get people passing by to notice you?* If kids aren't sure, remind them to think about how flowers attract bees. (Some ideas: Wear something bright and colorful, smell really good, offer up free food, etc.)
- **Encourage families to take home the "Waggle Dance" handout** to repeat the activity in their neighborhoods. Point out the "Explore Some More" activities as well. If you like, **give them "Explore Animals Around You" handout** to provide them with more ideas on how to continue investigating animals together.



## Explore Some More

### Fancy Dancer

Bee communication has a lot more steps to the waggle dance. For example, when bees circle round and round, that means flowers are very close to the hive. Search for "bee dance" videos online, including one on PBS's NOVA site, to see the dancing in action.

Besides the direction and distance of flowers, what if bees could communicate other information? Encourage families make up their own bee dance steps to tell their "hive mates":

- Amount of pollen and nectar
- Color of the flowers (bees can't see red)
- Presence of predators (bee-eater birds, for example)
- "Spread the word!" to other bees

**VISIT [pbskids.org/plumlanding/parents](http://pbskids.org/plumlanding/parents) to find more activities, games, and videos.**



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Major Funding is provided by the National Science Foundation and The Kendeda Fund: furthering the values that contribute to a healthy planet

# handout

# Waggle Dance



Exploring your world,  
one mission at a time  
[pbskids.org/plumlanding](http://pbskids.org/plumlanding)

## What Is This Activity?

### How do busy bees “tell” each other where to find pollen?

In this game, you play bees who find “pollen” by doing a dance.

**Big Science Idea:** Bees and flowers depend on each other to survive and thrive.

### Activity Time

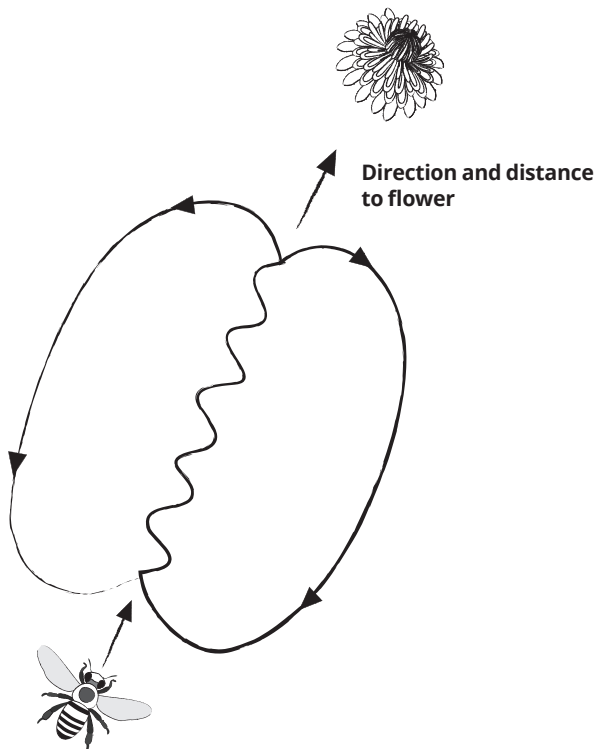
20 minutes

### Materials

- Colorful ribbon

## How to Play the Waggle Dance Game

1. Find an outdoor area that has trees, bushes, and other places to hide objects—a park or backyard.
2. Practice the Waggle Dance steps together (see art and directions below).
3. Ready? Close your eyes for the count of 10 while your child secretly hides a “flower” (the colored ribbon) in the play area.
4. Your child then returns to you and does the Waggle Dance to tell you how far and in what direction to find the flower.
5. How fast can you find it?
6. If stumped, ask your child to dance again.
7. Repeat the game, switching roles if you like, until you’re champion Waggle Dancers!



### How to Do the Waggle Dance

1. The number of “waggles” tells the other bees how far the flowers are. Decide how far away the “flower” (ribbon) is:  
**Nearby:** Do 1 Waggle Dance  
**Medium:** Do 2 Waggle Dances  
**Far:** Do 3 Waggle Dances
2. Face the direction of the flower.
3. Waggle your bottom while walking a few steps.
4. Circle to the right, back to start.
5. Waggle-walk again.
6. Circle to the left, back to start. That’s one waggle dance!



# Explore Some More

## Go See Bees

**Caution: Do not do this activity if your child is allergic to bees.**

Where? Visit a local urban beekeeper who gives tours, a zoo or science museum with a beehive on display, or an outdoor public garden with plenty of blossoms. Outdoors, watch the bees calmly from a safe distance. Bees won't sting unless they feel threatened. How long do they stay on a flower? How many flowers do they visit? What color are the flowers? Can you see pollen (yellow powder) stuck to the bees' bodies?

## Outdoor Family Fun with Plum App

This app gets families outdoors exploring the world. Every day, the app offers five outdoor missions to get everyone thinking and talking about nature and the science that's all around us.

Find these and more fun resources on [pbskids.org/plum](http://pbskids.org/plum).

## Plum's Creaturizer App

If you have a smartphone, download Plum's Creaturizer app. You can build imaginary creatures, and then take photos of the creatures outdoors, photobombing them into the scene! Use the app to help your child photograph the creature finding food, water, and shelter in the places you visit.



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This PLUM LANDING material is based upon work supported by the National Science Foundation under Grant No. DRL-1516466. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

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# hoja para repartir

# La danza del meneo



Exploramos tu mundo,  
una misión a la vez  
[pbskids.org/plumlanding](http://pbskids.org/plumlanding)

**Duración de la actividad**  
20 minutos

**Materiales**  
• Cintas de colores

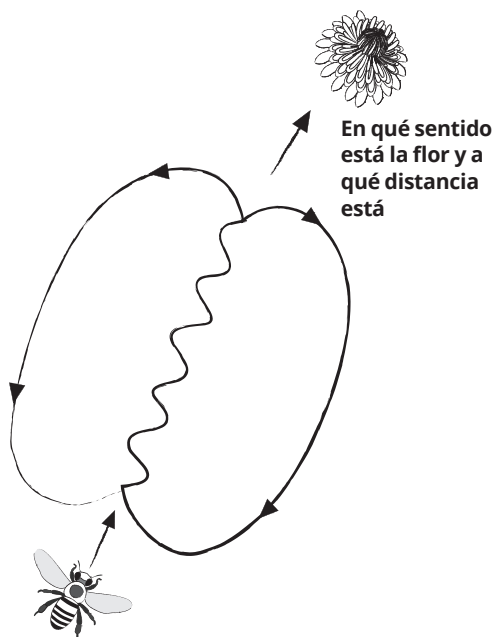
## ¿De qué trata esta actividad?

¿Cómo se comunican unas a otras las abejas de la ciudad para contarse dónde hay polen? En este juego, ustedes harán de cuenta que son abejas, que encuentran “polen” por medio de una danza.

**Megaconcepto científico:** Las abejas y las flores dependen unas de otras para sobrevivir y prosperar.

## Cómo jugar a “la danza del meneo”

1. Encuentren un espacio al aire libre que tenga árboles, arbustos y otros sitios en los que se puedan esconder objetos... puede ser un parque o un patio casero.
2. Practiquen juntos los pasos de la danza del meneo (ver imagen e instrucciones).
3. ¿Listos? Cierren los ojos y cuenten hasta 10 mientras el niño esconde una “flor” (la cinta de colores) en el espacio de juego.
4. El niño regresa y hace la “danza del meneo” para indicarle a qué distancia y hacia qué lado está la flor.
5. ¿Qué tan rápido pueden encontrar la flor?
6. Si no lo logran, pídale al niño que repita el baile.
7. Repitan el juego, turnándose cada papel, si quieren, hasta que sean “meneadores” campeones.



## Cómo hacer la danza del meneo

1. La cantidad de “meneos” les indica a las otras abejas qué tan lejos están las flores. Decidan qué tan lejos está la “flor” (la cinta):  
**Cerca:** Un meneo  
**A mitad de camino:** 2 meneos  
**Lejos:** 3 meneos
2. Miren en la dirección de la flor.
3. Meneen las caderas al tiempo que dan unos pocos pasos.
4. Giren a la derecha de vuelta al punto de inicio.
5. Caminen meneando otra vez.
6. Giren a la izquierda de vuelta al punto de inicio. Con esos pasos completas un meneo.

# Exploremos más

## Vayan a ver abejas

**Advertencia: No hagan esta actividad si el niño es alérgico a las abejas.**

¿Dónde? Vayan a ver a un apicultor urbano que ofrezca giras guiadas, vayan a un zoológico o a un museo de ciencias que tenga una colmena en exhibición o recorran un jardín público al aire libre en el que haya muchas flores. Si están al aire libre, observen las abejas a distancia prudencial sin hacer movimientos bruscos. Las abejas no pican a menos que se sientan amenazadas. ¿Cuánto tiempo permanecen en una flor? ¿Cuántas flores visitan? ¿De qué color son las flores? ¿Puedes ver el polen (un polvito amarillo) que se le ha pegado al cuerpo de las abejas?

Encuentren estos y más recursos divertidos en: [pbskids.org/plum](http://pbskids.org/plum).

## Diversiones familiares al aire libre con el app de Plum

Este app invita a las familias a explorar el mundo. Cada día, el app ofrece cinco misiones al aire libre que ponen a todos a pensar y a hablar sobre la naturaleza y la ciencias que tenemos a nuestro alrededor. Disponible en inglés solamente.

## El Animalizador de Plum (un app)

Si tiene un teléfono inteligente, descargue el app *Plum's Creaturizer*. Podrán crear animales imaginarios y tomarles fotos al aire libre, fotobombardeándolos a la escena. Use el app para ayudarle al niño a retratar a su animal encontrando comida, agua y refugio en los sitios que visiten. Disponible en inglés solamente.



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