

# EXPLORE FLYING SEEDS

Grades K-3: Week 3, Day 1

## MIMIC A MAPLE SEED'S FLIGHT

### WELCOME

### MINI-FLYER PLAY

(30 min)

#### Materials:

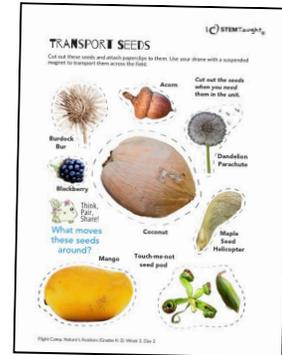
- Mini-flyers



**Introduction:** Welcome your students. Be friendly.

### THE GREAT SEED RACE!

Say: **Plants can't move around to spread out their seeds themselves— instead, plants create seeds that are designed in special ways to be moved about and planted by nature. Today, you will use your drone to move your seeds cards across your school yard.**



#### What you'll do:

1. Each group gets one copy of the handout "Transport Seeds".
2. Students cut out the seed shapes.
3. Students attach a string to the bottom of their mini-flier. Then, they tie a paperclip to the string.
4. Measure a distance of about 25 feet out on the school yard. Mark a starting line and an ending point. Students place their seed cutouts at the start and use their mini-flier to fly their paper seeds, one by one, to the finish line. Rotate roles so everyone gets to fly.

*\*Please charge your drone batteries for the second drone activity today.*

### READ

(20 min)



Seed Walk!

### READ THE STORY 'SEED WALK'

Say: **Animals aren't the only things that can fly in nature. Plants have evolved incredible ways for their seeds to fly too. By "flying," seeds avoid competition, find space to grow, and reach better conditions.**

Read the STEMTaught story, "Seed Walk," and pause to discuss the questions and do the interactive activities. Say: **Disperse means to move or scatter. What were some ways seeds were dispersed in the story?** (Example: **Float in water, drift in the breeze, be eaten by animals, hitch a ride on an animal's fur.**)

### MEDIA

(10 min)



### WATCH A VIDEO ON SEED DISPERSAL

Say: **Even though we will be focusing on seeds that are moved through air currents, not all seeds 'fly' or rely on wind to move them. There are many ways seeds are dispersed. Let's explore.**

#### Watch:

Watch the class movie: Exploring Seed Dispersion

**Link:** <https://youtu.be/-SQfaZogqyM>

## STEM TIME

(40 min)

### Materials:

- A test tube or collecting container (make a pouch out of paper)
- Blank paper
- Microscopes/Magnifying glass (Optional)



## GAME TIME

(20 min)

### Materials:

- Various balls of different shapes and sizes



## GO ON A SEED HUNT!

Say: **Today you'll go on a seed hunt outside! You will get to find seeds, observe them, and guess how they move from place to place based on how they look. What special seed structures will you find?**

### What you'll do:

1. Go outside to collect seeds. Take a collecting container. Take time to explore and interact with your students. This seed hunt should take 20-30 minutes. Have fun on your adventure and please don't cut the collection time short!
2. Students observe the shapes of their seeds closely. If available, use a magnifying glass or a microscope.
3. Have students study each seed and its structures to guess how it travels. Sort the seeds into categories according to how students think they are dispersed.
4. Students draw the special structures their seeds have that help them move from place to place.
5. Students sort the seeds into categories according to how the students think they are dispersed. They can glue the seeds to the handout (optional).



## PLAY "SEED SCATTER"

**Objective:** Students play a game which is an analogy for how seeds are moved by the wind far away from their parent tree.

### Teacher prep:

Find a place to play in an open grassy area by a tree. Gather balls of different shapes and sizes to represent seeds that blow in the wind.

### What you'll do:

Say: **I am a tree and this ball is my seed. Spread out around me so I can toss the ball to someone. You will be the wind to help spread this seed far away. If you get the ball, toss it to another student. See how far the seed can travel away from me, the tree. When the ball touches the ground one round of the game is over and you can bring the seed ball back to me.**

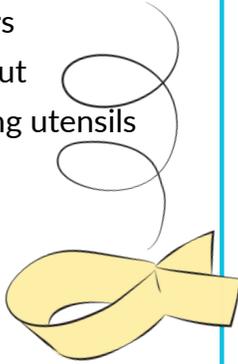
1. Toss the ball to a student.
2. The student with the ball tosses it to another student. Then repeat.
3. See how far your students can help the ball travel away from the starting point without letting the ball touch the ground. When the ball touches the ground, the game is over.
4. Make the game harder by having students throw to each other from farther away. See how far they can scatter the seed.
5. repeat with a different sized ball such as a ping pong ball, tennis ball, or basket ball.

## STEM TIME

(30 min)

### Materials:

- Scissors
- Handout
- Coloring utensils



## ORIGAMI

(30 min)

### Materials:

- Square paper

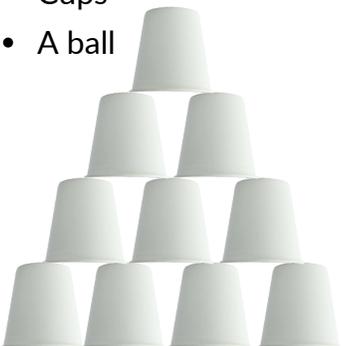


## CUP GAMES

(20 min)

### Materials:

- Cups
- A ball



## MAKE AND TEST A MAPLE FLIER

Say: **Today we will explore how a maple seed is dispersed in the wind by making a paper fish flier. Just try to drop it straight down and you will see that it does quite a bit of fluttering before it touches the ground.**

### What you'll do:

Students work in groups of two to use the handout to cut out their paper fish fliers. Students can decorate their fish flier.

Students test their fliers outside by dropping them down.

Remind students of the paper spinners, propellers, parachutes and other flight mechanisms they have tested.

**How does this seed flier compare to the other things you have experimented with?**

## MAKE AN ORIGAMI MAPLE SEED

Say: **This is a more detailed version of a maple seed. With the folds weighing it down in the right spots, this kind of seed will be thrown up and it will spin and flutter down.**

### What you'll do:

Students get square paper.

Students follow along with the video to create this origami seed.

### Origami Maple Seed (Davor Vinko)

[https://www.youtube.com/watch?v=VyPsIQIZH\\_Q&t=11s](https://www.youtube.com/watch?v=VyPsIQIZH_Q&t=11s)

Once done, have students compare flight path of the origami maple seed flier and the paper fish flier. Challenge them to count which one does more spins before it touches the ground.

## PYRAMID BOWLING

**Objective:** Score the most points by knocking down the most cups with a tennis ball or other small ball. The scattering of the cups mimics the motions of seed dispersal.

### Instructions:

1. Set up multiple games of about three or four players each.
2. Students set up 10 cups to represent bowling pins—one in bottom row, two in the middle row, three in the third, and four in the fourth.
3. Each player will get four throws to try to knock down all the cups. Each cup that is knocked down is scored as 1 point. The players with the highest scores after four games is the winner.

## MINI-FLYER PLAY

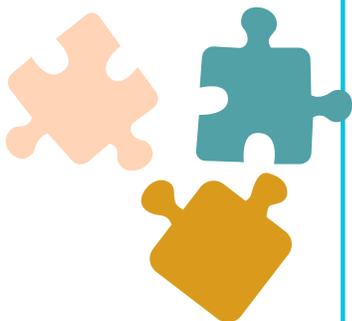
(20 - 30 min)

### Materials:

- Cups
- Drones

## PUZZLE TIME

(30 - 40 min)



## CLEAN UP / DISMISSAL

## PLAY MINI-FLIER PYRAMID SMASH!

### Instructions:

1. Students stack pyramids made of cups.
2. Students take turns tossing the mini-flier drone at their cup-pyramid stacks from a six to ten feet away to see how many cups they can knock down. Let everyone have one throw.
3. Back up to 15 feet and play again. Let everyone have a one throw.
4. Back up and play again. See how far you can throw the mini-flier to knock down all the cups.



## USE THE SCIENTIFIC PROCESS: 500 PIECE PUZZLE

**Objective:** Students use the scientific process and group work to put together a puzzle.

### Prep beforehand:

Set aside a corner of the room or table to store this puzzle as students will begin solving it today then come back to it on Day 5.

### Instructions:

Say: When you're solving a puzzle, you are curious, organized, and patient, just like a scientist. Follow these steps to solve your puzzle.

### Step 1: Collect your data

Turn all your puzzle pieces picture-side down. It is important for scientists to begin by collecting all the raw data, even before they know how it fits.

### Step 2: Sort and Observe – Organize your data

Now flip the pieces back, and start sorting. Put all the pieces that have a flat edge in one pile. These will be your corner and edge pieces. Scientists organize materials by putting it into piles.

### Step 3: Build the Border

Study the picture on the box and begin to build the edges. Use all the flat sided pieces and build the frame. In science, this is called defining the problem or boundaries.

Say: You've taken very important steps today! If you aren't done with the border yet, that's okay. We will come back to this in a couple of days and finish our puzzle.

Say: You've taken very important steps today! If you aren't done with the border yet, that's okay. We will come back to this in a couple of days and finish our puzzle.

**Note:** Store any remaining flat-edged pieces in a separate baggie and push the work in progress puzzle to the side.



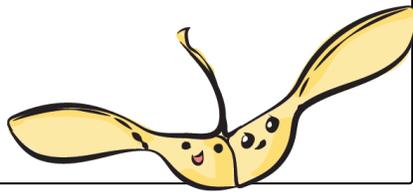
# MY AMAZING SEEDS

## See my seed walk discoveries

Explore your school grounds and look for seeds. Sort your seeds according to how they disperse and glue them to your worksheet.

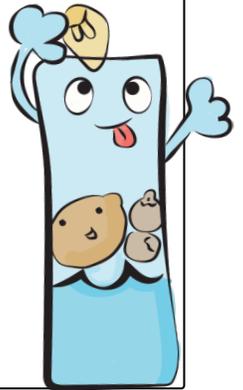
**These seeds can fly**

(Glue seeds here.)



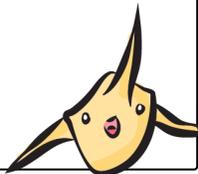
**These seeds can float**

(Glue seeds here.)



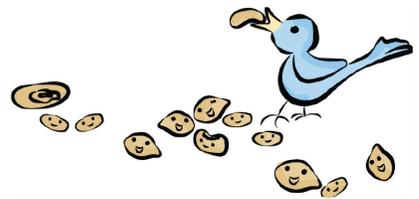
**These seeds stick to animals**

(Glue seeds here.)



**These seeds are eaten by animals**

(Glue seeds here.)



# TRANSPORT SEEDS

Cut out these seeds and attach paperclips to them. Use your drone with a suspended magnet to transport them across the field.

***Cut out the seeds when you need them in the unit.***



**Burdock  
Bur**



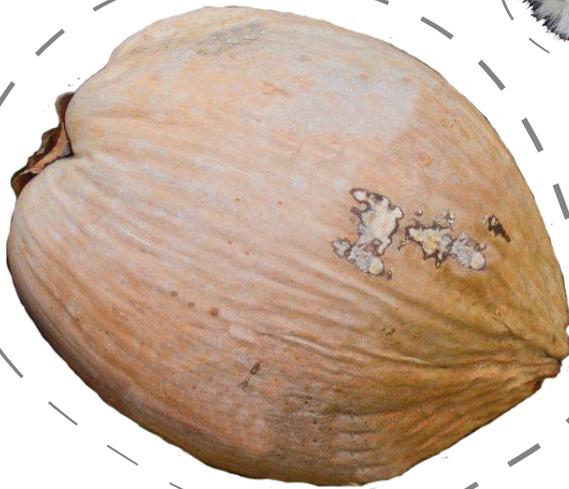
**Acorn**



**Dandelion  
Parachute**



**Blackberry**



**Coconut**

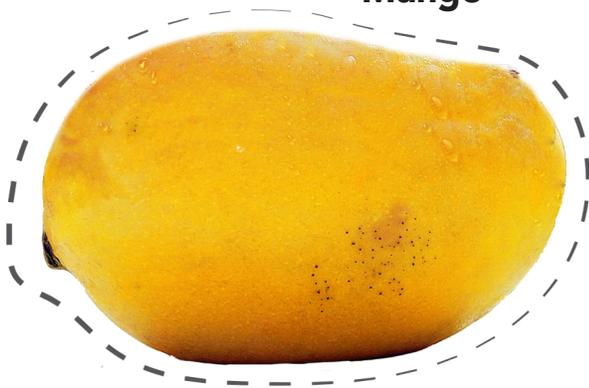


**Maple  
Seed  
Helicopter**



**Think,  
Pair,  
Share!**

**What moves  
these seeds  
around?**



**Mango**

**Touch-me-not  
seed pod**



# PAPER FISH FLIER

What you'll need:

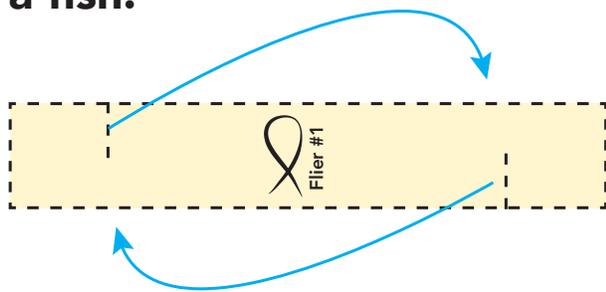
- Scissors

What you'll do:

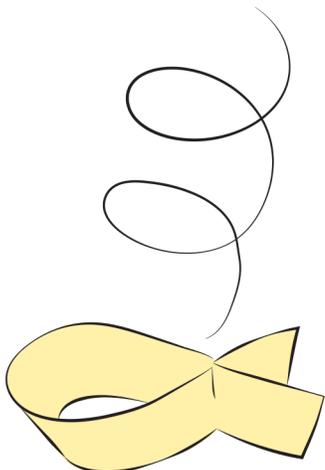
1. Cut out a strip of paper.
2. Cut on the dotted lines.



3. Attach the two ends together by joining the slots to make the shape of a fish.



4. Drop the paper fish and watch it flutter.



Cut



Flier #1



Flier #2