Variations in Plants and Animals
Lesson 3b: Trait Variations Affect the Survival of Cottonwood-Tree Seeds

Grade 1	**Length of lesson:** 45 minutes	**Placement of lesson in unit:** 3b of 5 lessons on variations in plants and animals
Unit central question: How do differences (variations) in plants or animals of the same kind help them survive so they can produce young (babies or seeds)?		**Lesson focus questions:** Will bigger or smaller cottonwood-tree seeds be more likely to survive and grow after the wind carries them away? Why do you think so?
Main learning goal: Trait variations in plants or animals of the same kind affect which individual plants or animals survive and which don't.		
Science content storyline: The traits of individuals of the same kind of animal or plant, such as a cottonwood tree, can vary. For example, some cottonwood-tree seeds are bigger than others. When the wind disperses seeds, the size of the seeds can affect how far they travel. Scientists collect and analyze data (evidence) to find out whether trait variations, such as the size of cottonwood-tree seeds, affect which plants or animals of the same kind survive and which don't. A model can help us test ideas when it's too hard to test them in the real world.		
Ideal student response to the focus questions: Cottonwood trees have seeds that are different sizes. Some seeds are big, and others are small. When the wind blows, the seeds travel away from the cottonwood tree. The seeds that travel the farthest from the parent tree are more likely to survive and grow. Our cottonwood-seed model showed us that most small cottonwood seeds (cotton balls) travel farther from the tree when the wind carries them away, so they're more likely to survive and grow into new cottonwood trees because they'll have more space to grow and get more sunlight and rain.		

Preparation

Materials Needed
- Student notebooks
- Chart paper and markers
- Class chart of cottonwood-tree traits (from lesson 3a)
- Materials for the cottonwood-seed investigation (see handout 3.4)
  - Cotton balls (1 1/4 per student)
  - A 12-inch fan
  - Butcher paper (approximately 6–7 feet or 2–2.5 meters long)
  - Markers/crayons, sticky dots, or glue
- **Optional:** YouTube video, *Cottonwood Seed Blowing in the Wind* (https://youtu.be/9Cgvjm04EVg)

Student Handouts and Teacher Masters
- 3.3 Cottonwood-Seed Model: Your Predictions (from lesson 3a)
- 3.4 Protocol for the Cottonwood-Seed Investigation (Teacher Master)

Ahead of Time
- Review the content background document.
- Decide whether to show the 30-second YouTube video (*Cottonwood Seed Blowing in the Wind*) at https://youtu.be/9Cgvjm04EVg during the activity setup. Even if you showed the video in the previous lesson, it might be helpful for students to see it again.
- Follow the protocol in handout 3.4 (Protocol for the Cottonwood-Seed Investigation) to set up the cottonwood-seed model. Perform a trial run to ensure that everything is set up correctly.
- Decide whether to have students use Option A, B, or C to mark where the cotton balls land on the butcher paper (see handout 3.4).

Lesson 3b General Outline

Time	Phase of Lesson	How the Science Content Storyline Develops
5 min	**Link to previous lesson:** The teacher reviews traits and variations in cottonwood-tree seeds from the previous lesson.	• The traits of individual cottonwood seeds can vary, such as the size of the seeds. These trait variations can affect which plants survive and which don't.
1 min	**Lesson focus questions:** The teacher reviews the focus questions from the previous lesson: *Will bigger or smaller cottonwood-tree seeds be more likely to survive and grow after the wind carries them away? Why do you think so?*	
10 min	**Setup for activity:** The teacher reviews the cottonwood-seed model and what each part represents. Then students share their predictions about which cotton balls will travel farther when the wind (fan) blows them. Afterward, the teacher repeats the demonstration with the cotton balls and explains the procedure students will follow for the investigation.	• The traits of individual cottonwood-tree seeds can vary, such as the size of the seeds. Scientists use models to help them answer questions about the things they're investigating. Like scientists, we can use a model to help us figure out whether larger or smaller cottonwood-tree seeds travel farther on the wind, and which seeds have a better chance of surviving and growing into new cottonwood trees.
10 min	**Activity:** Using the cottonwood-seed model, students investigate whether the larger or smaller cotton balls (cottonwood seeds) travel farther after they drop them in front of a running fan. After the investigation, students mark where the cotton balls landed on the paper.	• The traits of individual cottonwood seeds can vary, such as the size of the seeds. These trait variations can affect which plants survive and which don't. Like scientists, we can use a model to investigate whether larger or smaller cottonwood seeds travel farther on the wind. The data (evidence) we collect will help us figure out which seeds have a better chance of surviving and growing into new cottonwood trees.
10 min	**Follow-up to activity:** The class discusses the results of the cottonwood-seed investigation, and the teacher helps students make sense of the data. Based on the evidence, students conclude that smaller cottonwood seeds are more likely to survive and produce new cottonwood trees because most of them will land farther away from the parent tree and will have more space, sunlight, and rain to grow.	• The traits of individual cottonwood seeds can vary, such as the size of the seeds. These trait variations can affect which plants survive and which don't. Like scientists, we can use a model to investigate whether larger or smaller cottonwood seeds travel farther on the wind. The data (evidence) we collect will help us figure out which seeds have a better chance of surviving and growing in the environments where they land. Smaller cottonwood seeds that travel farther from the parent tree are more likely to get what they need to survive and grow into new trees.
8 min	**Synthesize/summarize today's lesson:** Students answer the focus questions using evidence from the cottonwood-seed investigation to support their ideas. Then students share their ideas and evidence with the class.	
1 min	**Link to next lesson:** The teacher announces that in the next lesson, students will consider the kinds of places that might help cottonwood seeds survive and grow into new cottonwood trees.	

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5 min	**Link to Previous Lesson** **Synopsis:** The teacher reviews traits and variations in cottonwood-tree seeds from the previous lesson. **Main science idea(s):** • The traits of individual cottonwood seeds can vary, such as the size of the seeds. These trait variations can affect which plants survive and which don't.	Summarize key science ideas.	**Show slides 1 and 2.** In our last lesson, we learned about cottonwood trees. What are some *traits* of a cottonwood tree? **NOTE TO TEACHER:** *If students need to refresh their memories, display the chart of cottonwood-tree traits from lesson 3a.* Are these traits the same for all cottonwood trees? What is the fluffy, white stuff on the trees' leaves? What cottonwood-seed *trait* did we look at last	It has leaves. It's really big and tall. It has a trunk and branches. It has roots. It has fluffy, white stuff on its leaves. Yes. Because that's what makes them cottonwood trees. They're cottonwood seeds. We looked at the	How do you know? Do you think all cottonwood trees have seeds?

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			time? What *variations* in that trait did we talk about? Today we'll continue exploring variations in the size trait of cottonwood seeds and see if we can figure out whether larger or smaller seeds have a better chance of surviving and growing into new cottonwood trees.	size trait of the seeds. Big seeds and small seeds. We talked about big and small variations in the seeds. They make the seeds different.	Can you use the word *variations* in your answer? Do these variations make the seeds alike or different?
1 min	**Lesson Focus Questions** **Synopsis:** The teacher reviews the focus questions from the previous lesson: *Will bigger or smaller cottonwood-tree seeds be more likely to survive and grow after the wind carries them away? Why do you think so?*	Set the purpose with a <u>focus question</u> or goal statement.	**Show slide 3.** Our focus questions for this lesson are the same as our last lesson: *Will bigger or smaller cottonwood-tree seeds be more likely to survive and grow after the wind carries them away? Why do you think so?* Last time, I demonstrated the model we're going to use today to investigate how the size of cottonwood seeds affects which seeds have a better chance of surviving and growing into new		

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			cottonwood trees. The evidence we gather from our investigation will help us answer our focus questions.		
10 min	**Setup for Activity** **Synopsis:** The teacher reviews the cottonwood-seed model and what each part represents. Then students share their predictions about which cotton balls will travel farther when the wind (fan) blows them. Afterward, the teacher repeats the demonstration with the cotton balls and explains the procedure students will follow for the investigation. **Main science idea(s):** • The traits of individual cottonwood-tree seeds can vary, such as the size of the seeds. Scientists use models to help them answer questions about the things they're investigating. Like scientists, we can use a model to help us figure	Select content representations and models matched to the learning goal and engage students in their use. Ask questions to elicit student ideas and predictions. Ask questions to probe student ideas and predictions.	**Show slide 4.** Let's talk about our cottonwood-seed model for a moment. **ELL support:** Be explicit about the parts of the model and how they represent the real world but aren't exactly like the real thing. What does the fan in our model represent? What are the cotton balls? What do they represent? What do the big cotton balls represent? What do the small cotton balls represent? What does the paper on the floor represent? What is it supposed to be? What is the line on the paper marked "Tree" supposed to be? **Show slide 5.**	The wind. Cottonwood seeds. Big cottonwood seeds. Small cottonwood seeds. The ground. Where the cottonwood tree is standing.	

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	out whether larger or smaller cottonwood-tree seeds travel farther on the wind, and which seeds have a better chance of surviving and growing into new cottonwood trees.		What are we using our model to investigate today? Why are we using a model instead of using real things?	We're using the model to find out which seeds will go farther when the wind blows them. It will help us figure out which cottonwood seeds are more likely to survive and grow into new trees. Because we don't have a real cottonwood tree with seeds. It would be hard to use the wind outdoors. A fan. The wind might not	What else will this help us figure out? What part of our focus question will this help us answer? What are we using instead of the wind?

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				be blowing. We can't control the wind. It would be hard to find our cotton balls outside.	What do you mean by "we can't control the wind"?
			In a few minutes, I'm going to give each of you a big cotton ball and a small cotton ball, and you're going to drop each one in front of the fan just like I did in the demonstration. What do the cotton balls represent again? And why are we going to drop the cotton balls in front of the fan? Why do you think it's important to find out whether the wind will blow the bigger or smaller seeds farther away from the tree? **NOTE TO TEACHER:** *Throughout this lesson, emphasize that variations in traits are important for the survival of plants or animals of the same kind. Otherwise, students might think that dropping cotton balls in front of a fan is just a fun*	Cottonwood seeds. We want to find out whether the wind will blow the bigger or smaller cotton balls or seeds farther away from the tree. Because the seeds might have a better chance of surviving and growing if they're farther away from the tree.	How would being

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
			activity with no connection to science ideas like traits, variations, and survival. *If time allows, show the 30-second YouTube video of cottonwood seeds blowing in the wind (https://youtu.be/9Cgvjm04EVg). Even if you showed it in the previous lesson, replaying the video will remind students that the model they're using represents real cottonwood seeds.* **Show slide 6.** Next, take out the predictions you wrote on your handouts last time and review them. **NOTE TO TEACHER:** *Have students locate handout 3.3 (Cottonwood-Seed Model: Your Predictions) from lesson 3a.* **Whole-class share-out:** Who would like to share your prediction? Do you think the bigger or smaller cotton balls (or cottonwood seeds) will travel farther when the wind from the fan blows them? Why do you think so? **NOTE TO TEACHER:** *Keep this discussion brief. Display the predictions you recorded on chart paper during the last lesson and add any new predictions or reasons students come up with during this discussion.* So we're going to use our model to help us figure	They might have more space to grow and get more sunlight and rain.	farther away from the tree help the seeds survive and grow?
		Ask questions to elicit student ideas and predictions. Make explicit links between			

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		science ideas and activities **before** the activity.	out whether bigger or smaller cottonwood seeds travel farther on the wind. And then we'll talk about how this can make a difference in which seeds survive and grow into new cottonwood trees and which don't. Before we conduct our cottonwood-seed investigation, I'm going to use our model again to demonstrate what you'll be doing. Make sure to pay attention so you'll know what to do. And remember to keep your hands and clothes a safe distance from the fan! This time, after the cotton balls land on the paper, I'm going to show you how to mark where they land so we can see how many of each size landed closest to the line where the tree is and how many of each size landed farther from the tree. **NOTE TO TEACHER:** *Perform the demonstration again, but this time, follow the procedure in step 5 of handout 3.4 (Protocol for the Cottonwood-Seed Investigation). After each cotton ball lands on the paper, show students how to mark where it lands using the markup option you selected.*		
10 min	**Activity** **Synopsis:** Using the cottonwood-seed model, students investigate whether the larger or	Select content representations and models matched to the	**Show slide 7.** Now let's use our model to see how far our cotton balls, or cottonwood seeds, will fly when the wind blows them!		

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	smaller cotton balls (cottonwood seeds) travel farther after they drop them in front of a running fan. After the investigation, students mark where the cotton balls landed on the paper. **Main science idea(s):** • The traits of individual cottonwood seeds can vary, such as the size of the seeds. These trait variations can affect which plants survive and which don't. Like scientists, we can use a model to investigate whether larger or smaller cottonwood seeds travel farther on the wind. The data (evidence) we collect will help us figure out which seeds have a better chance of surviving and growing into new cottonwood trees.	learning goal and engage students in their use.	**NOTE TO TEACHER:** *Give each student a full-size (big) cotton ball and a quarter-sized (small) cotton ball. Direct one student to come up and prepare to drop the big cotton ball in front of the fan exactly the way you demonstrated. Check the position before signaling the student to drop the cotton ball straight down. Then have the student mark where the cotton ball landed using the markup method you chose. Next, have the same student drop the small cotton ball in front of the fan and mark where it lands.* *Ask each student to come up one at a time and drop the big and small cotton balls in front of the fan in succession. Help ensure that students place their cotton balls in the same position each time and drop them straight down in front of the fan so they blow forward across the butcher paper. Emphasize that for a fair test, it's important that each cotton ball is dropped exactly the same way.* When I call your name, come up and stand behind the fan. 1. First, hold your *big* cotton ball near the top of the fan in the middle so the wind from the fan is blowing on it. Don't let the cotton ball go until I check to make sure it's in the right position. 2. Then when I give the signal, drop your cotton ball straight down and let it fly in the wind. 3. After the cotton ball comes to rest on the		

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		Make explicit links between science ideas and activities **during** the activity.	paper, mark where it landed and then remove it from the paper *[unless students glue the cotton balls to the paper]*. 4. Next, you'll hold your *small* cotton ball in the same position and drop it straight down when I give the signal. 5. After the cotton ball comes to rest on the paper, mark where it landed and then remove it from the paper *[unless students glue the cotton balls to the paper]*. Everyone will take a turn dropping their cotton balls in front of the fan and marking where they land. After we've dropped all of our cotton balls, or cottonwood seeds, we'll look at where the bigger and smaller cotton balls landed and talk about which ones traveled farthest from the tree. Then we'll discuss how our results or evidence helps us figure out whether larger or smaller cottonwood seeds are more likely to survive and grow. **NOTE TO TEACHER:** *Clarify the markup method for students before beginning the investigation. If you have students glue their cotton balls to the paper, they'll be able to see more clearly where all of the bigger and smaller cotton balls landed. The other markup methods require removing the cotton balls after marking the paper, which could make it more difficult for students to compare where the cotton balls landed and analyze distances.*		

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10 min	**Follow-Up to Activity** **Synopsis:** The class discusses the results of the cottonwood-seed investigation, and the teacher helps students make sense of the data. Based on the evidence, students conclude that smaller cottonwood seeds are more likely to survive and produce new cottonwood trees because most of them will land farther away from the parent tree and will have more space, sunlight, and rain to grow. **Main science idea(s):** • The traits of individual cottonwood seeds can vary, such as the size of the seeds. These trait variations can affect which plants survive and which don't. Like scientists, we can use a model to investigate whether larger or smaller cottonwood seeds travel farther on the wind. The data	Make explicit links between science ideas and activities **after** the activity. Engage students in analyzing and interpreting data and observations. Engage students in constructing explanations and arguments.	Today we used a model to help us study differences or variations in cottonwood seeds. What trait variations did we investigate? What are we trying to find out about the bigger and smaller seeds? What question are we trying to answer? Why is it important to find out whether the bigger or smaller cottonwood seeds travel farther from the tree? **Show slide 8.**	Big and small variations in cottonwood seeds. We're trying to find out whether the bigger or smaller seeds travel farther from the tree. Because the seeds that travel farther from the tree might have a better chance of surviving and growing into new cottonwood trees. Because they might have more space and get more sunlight and rain.	Why do you think the seeds might have a better chance of surviving and growing farther from the tree?

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	(evidence) we collect will help us figure out which seeds have a better chance of surviving and growing in the environments where they land. Smaller cottonwood seeds that travel farther from the parent tree are more likely to get what they need to survive and grow into new trees.		Now let's talk about the results of our investigation and see if we can figure out whether the bigger or smaller cottonwood-tree seeds are more likely to survive and grow. **NOTE TO TEACHER:** *Display the butcher paper in a prominent place in the room so everyone can see the data clearly. Remind students that the line marked "Tree" near the front of the fan is where the cottonwood tree is standing and where the seeds were hanging before the wind blew them away. Students should be able to see which seeds are closer to the parent tree and which seeds traveled farther on the wind.* What did we find out about our cotton balls? What does the evidence show us? How did we collect evidence? How did we mark the places where the smaller cotton balls landed? How did we mark the places where the bigger cotton balls landed?	We found out which cotton balls or cottonwood seeds traveled farther from the tree. We marked where the cotton balls landed on the paper. *[Students should indicate that they marked the places where the cotton balls landed using one of the three*	

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				markup options.]	
			Show slide 9. Next, we'll use the data we collected on where the cotton balls landed to think about the main question for this investigation: *Do bigger or smaller cottonwood-tree seeds travel farther in the wind?* Where did most or all of the bigger cotton balls land? Did they land closer to the tree or farther away? **NOTE TO TEACHER:** *To help students visualize whether the cotton balls landed closer to or farther from the tree, you might want to label the butcher paper "Closer to the tree" on the side that's closer, and "Farther from the tree" on the side that's farther away.* **ELL support:** It might be a good idea to reinforce why students used so many of each size of cotton ball to determine which cottonwood seeds travel farther in the wind. The reason isn't simply so that every student could participate in the activity but because (1) trees release a lot of seeds, and (2) scientists conduct many trials to confirm their evidence and ensure its accuracy. Where did most or all of the smaller cotton balls land? Did they land closer to the tree or farther away?	Most of the bigger cotton balls landed closer to the tree. We marked where the bigger cotton balls landed on the paper, and most of them are closer to the tree. Most of the smaller	How do you know? What's your evidence?

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				cotton balls landed farther away from the tree. We marked where the smaller cotton balls landed on the paper, and most of them are farther away from the tree.	How do you know? What's your evidence?
			Show slide 10. How does our evidence help us answer the question, *Do bigger or smaller seeds travel farther in the wind?* STOP Listen to students' ideas. What's visible about student thinking? What does our evidence show us about where the bigger cotton balls landed? So our evidence shows that the bigger cotton balls landed closer to the tree. Why do you think that happened?	Our evidence shows which seeds landed closer to the tree and which landed farther away. That helps us see which seeds traveled farther in the wind. The bigger cotton balls landed closer to the tree. Because the bigger cotton balls are heavier, so the wind doesn't blow them as far.	

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			How about the smaller cotton balls? What does our evidence show us about where they landed? Yes, our evidence shows that the smaller cotton balls landed farther away from the tree. Why do you think that happened? That's right! The smaller cotton balls are lighter, so the wind blew them farther away from the tree. Now look back at the predictions you wrote on your handout in our last lesson. Does our evidence match what you predicted would happen? **NOTE TO TEACHER:** *If time allows during this follow-up (or during a math period), invite students to quantify their data by using nonstandard units of measurement to measure how far a subset of the seeds traveled along the "ground." Record the measurements (the data) on the butcher paper; then ask students to compare and contrast how far the bigger seeds and smaller seeds traveled. In general, which seeds traveled farther—the smaller seeds or the bigger seeds?* **Show slide 11.**	The smaller cotton balls landed farther away from the tree. Because the smaller cotton balls are lighter, so the wind carried them farther away from the tree.	

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			Now let's think about why the distance a cottonwood seed travels from the parent tree might make a difference in whether it survives and grows or not. Think about the bigger cottonwood seeds that land closer to the parent tree and the smaller seeds that land farther away. What do all of the seeds need to survive and grow? Yes, all of the seeds need sunlight, rain, and space in the dirt to grow. Do you think the seeds would get what they need to survive and grow if they land closer to the tree or farther away from the tree? Why do you think so?	The seeds need sunlight, rain, dirt, and space to grow. I think the seeds would find more space to grow farther away from the tree because closer to the tree there would be more crowded. I think the seeds would get more sunlight farther	Why do you think there is more space farther away from the tree?

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				away from the tree. Because there aren't any branches to keep the sunlight out. If they're under the tree, they'd be in the shade all the time.	Why do you think they'd get more sunlight?
			So we think the seeds would find what they need to grow farther away from the tree than closer. Can you think of any other reasons why they'd find what they need to grow farther away from the tree? **ELL support:** An open-ended conversation can help ELL students find more ways to engage with the topic. You may want to have students spend more time talking to a partner or in a small group so that they can prepare for the class discussion. **Show slide 12.** If a cottonwood-tree seed is more likely to get what it needs to grow if it's farther away from the parent tree, which seeds—the bigger ones or the smaller ones—have a better chance of surviving and growing?		

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			Look at where the cotton balls landed on the paper. What does our evidence tell us about which seeds have a better chance of surviving and growing into new cottonwood trees? **NOTE TO TEACHER:** *Remind students where the parent tree is in the model and which seeds are farther from the parent tree.* Does anyone have a different idea? Make sure to use evidence from our model.	I think the bigger seeds will have a better chance of surviving. Even though the bigger seeds landed closer to the tree on the paper and may not get as much space or sunlight, I think they'll survive because they're bigger and stronger. I think the smaller seeds will survive and grow because they're farther away.	Say more about why you think the bigger seeds will have a better chance of surviving. What evidence do you have? What do you mean by "stronger"? Show me what you mean by "farther

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				The smaller seeds are farther away from the tree and will probably get more space and sunlight to grow.	away."
8 min	**Synthesize/Summarize Today's Lesson** **Synopsis:** Students answer the focus questions using evidence from the cottonwood-seed investigation to support their ideas. Then students share their ideas and evidence with the class. **Main science idea(s):** The traits of individual cottonwood seeds can vary, such as the size of the seeds. These trait variations can affect which plants survive and which don't. Like scientists, we can use a model to investigate whether larger or smaller cottonwood seeds travel farther on the wind. The data (evidence) we collect will help us	Highlight key science ideas and focus question throughout. Engage students in making connections by synthesizing and summarizing key science ideas. Engage students in constructing explanations and arguments. Engage	**Show slide 13.** Let's revisit our focus questions, *Will bigger or smaller cottonwood-tree seeds be more likely to survive and grow after the wind carries them away? Why do you think so?* Think about the results of our cottonwood-seed investigation and then complete the sentence on the slide in your science notebooks: *I think [**bigger** or **smaller**] cottonwood-tree seeds are more likely to survive and grow into new cottonwood trees because …* Circle the word *bigger* or *smaller* to show what you think. Make sure to include evidence from our model to support your explanations. And be ready to share your ideas and evidence with the class. **ELL support:** Provide language and visual aids for ELL students to use for this writing assignment.		

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	figure out which seeds have a better chance of surviving and growing in the environments where they land. Smaller cottonwood seeds that travel farther from the parent tree are more likely to get what they need to survive and grow into new trees.	students in analyzing and interpreting data and observations.	**NOTE TO TEACHER:** *As students construct their explanations, circulate around the room and assist them if necessary. Encourage students to refer to the class data and use the words* wind, farther away, and parent tree *in their answers.* **Whole-class share-out:** Who would like to share your answers and evidence with the class? Do you think bigger or smaller cottonwood-tree seeds are more likely to survive and grow into new cottonwood trees? Why do you think so?	I think the bigger cottonwood seeds will survive and grow into new trees because they're stronger than smaller seeds. I think the smaller cottonwood seeds will survive and grow into new trees because they'll travel farther from the tree.	What do you mean by "stronger"? Why would being bigger and stronger help the seeds survive and grow? Why would traveling farther from the parent tree

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		Summarize key science ideas.	**Show slide 14.** So the evidence from our investigation shows us that the wind blows smaller cottonwood seeds farther away from the parent tree. Smaller seeds are more likely to survive and grow into new cottonwood trees they can get more space, sunlight, and rain farther away from the parent tree. Bigger seeds land closer to the parent tree because they're heavier, and the wind doesn't blow them as far. These seeds are less likely to survive and grow because they may not get enough space, sunlight, or rain.	Because they have more space to grow, and they'll probably get more sunlight and rain.	help the smaller seeds survive and grow?
1 min	**Link to Next Lesson** **Synopsis:** The teacher announces that in the next lesson, students will consider the kinds of places that might help	Summarize key science ideas.	Today we investigated how differences or variations in the size trait of cottonwood-tree seeds can affect which seeds survive and which don't. Smaller seeds have a better chance of surviving because the wind blows them farther away from the parent tree, where they can get more space, sunlight, and rain to grow.		

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	cottonwood seeds survive and grow into new cottonwood trees.	Link science ideas to other science ideas.	**Show slide 15.** In our next lesson, we'll use our cottonwood-seed data to think about the kinds of places that might help cottonwood seeds survive and grow into new cottonwood trees. Is the place where a cottonwood seed lands important for its survival? We'll find out next time!		