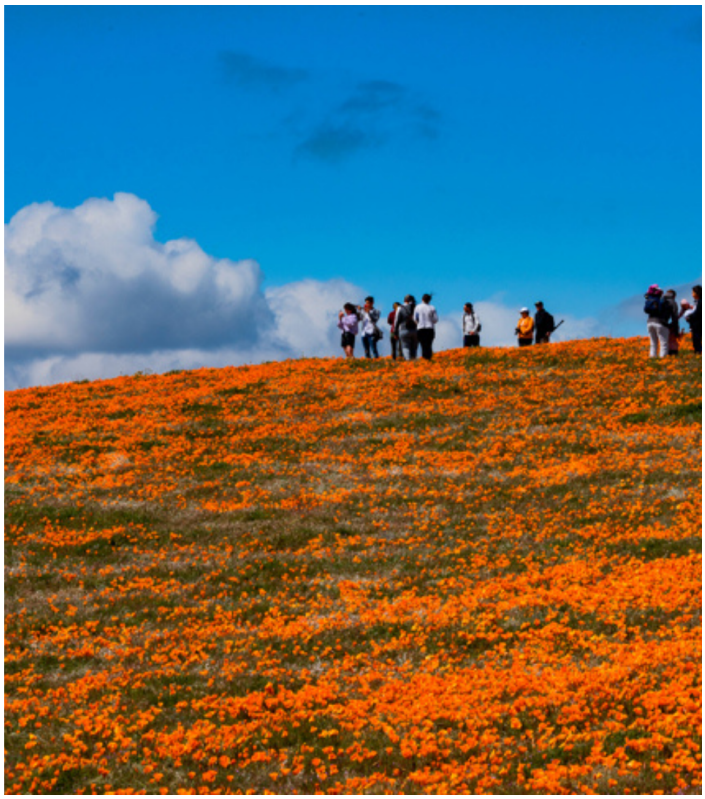
SuperBlooms: What are super blooms and what makes them so super?

Everywhere you see a box, add your answers to the questions.

These photos are of the same location in California.



Observe the phenomenon.

Look at the two images. What do you notice (observations)? What do you wonder (questions)?

What do you notice?	What do you wonder?

Learn a bit more.

1. Draw and write down your observations of your dry beans. What do you notice about the bean? What does it look like? What does it feel like? Remember to use scientific observations and label your drawing.

2. Hold your bean between your thumb and your finger. When you press down, does the seed squish between your fingers? Describe what you are feeling.

3. Soak a few of the beans in water overnight, 12 to 24 hours (not too much water, just a little to cover the seed completely).
4. Take one bean out of the water and place it on a paper towel.
5. Hold your bean between your thumb and your finger, when you press down, does the seed squish between your fingers? Do you notice a difference? Describe what you are feeling.

6. Rub the soaked bean between your fingers. The **seed coat** on the outside should rub off. Hold the seed coat in your hands.

7. Write your observations of your seed coat. What does it look like? How does it feel? Draw and write your observations below. Remember to label your drawings.

What are the parts of a seed?

During your seed dissection, you probably noticed two main parts of the seed, the cotyledon, and the seed coat. The cotyledon is the food source for the seed until it can grow leaves and begin photosynthesis. At top of the seed is the embryo, the plant itself.

Answer the reflection questions.

What is a seed?

Beans are seeds, so why don't they grow when they're in the bag at the grocery store?

Why do you think seeds have a seed coat? Support your answer with evidence from your investigation.

Seed Characteristics

GENERATE IDEAS: Using the photos in the Google Slides, how would you sort the seeds in the photo?

What were some of the characteristics the seeds had in common? Did you have a unique way to sort? Were there any seeds that couldn't be grouped?

Reflection Questions

What were some of the characteristics the seeds had in common?

Did you have a unique way to sort the seeds?

Were there any seeds that couldn't be sorted?

Reflection Questions

Use the boxes below to record thoughts and interesting ideas.

What do you notice about the seed coats?

Remember your seed dissection. How do you think these microscopic seeds might change when they get wet?

Considering all the seeds you looked at, why aren't all the seed coats the same? Why aren't all the shapes the same?

Seed Coats And Superblooms

What did you think of the Science Friday segment? What were some of your a-ha moments?

Design A Seed Challenge

In this next challenge, you will be given a random seed challenge card. Your challenge is to create a seed that can survive the elements of your biome. Research information using the Biome Cards to help guide you in designing the seed.

Criteria:

- Design a seed that can survive your selected biome.
- Identify what the seed will need in order to germinate(Claim).
- Label and describe how the seed adaptations work towards its survival. You will need three adaptations for the survival of the seed(Evidence).
- Complete a Claims, Evidence and reasoning (CER) on your Design a Seed project.

Think about what seeds need in order to start the germination process. In the case of the super bloom, the seed needs three things:rainfall, warmth, and lack of drying winds. What do plants need to survive?

What are the conditions in your selected biome?

What would your seed need to survive the conditions of your selected biome?

Design a seed that could withstand the elements and survive. Label the parts and explain what their function is to help the seed survive in your selected biome.

State your claim on why your seed design will germinate in your selected biome.

Support your claim with three pieces of evidence (what functions/adaptations does your seed have?).

Reasoning: Give a complete answer. Restate your claim. Include your evidence. Give a final comment on why your seed would germinate.