Hand Pollinator

- **Develop and use a model** that mimics the function of an animal dispersing seeds or pollinating plants. Examples could include plants that have seeds with hooks or barbs that attach themselves to animal fur, feathers, or human clothing, or dispersal through the wind, or consumption of fruit and the disposal of the pits or seeds. (LS2.A)

Phenomenon- watch a clip of butterflies or bees up close

?- What are pollinators, pollination, pollen- define

Problem- I have a plant that is not being pollinated by insects. What can we do to help?

We can build our own pollinator to help the plant.

Questions-

In order to design a hand pollinator for different plants, what are some things we may need to know about?

1. How does pollination work?
2. What parts of a plant have nectar and which parts have pollen and where are the seeds.
3. How does a hand pollinator work?
4. What materials do we have to use to design a hand pollinator?
5. Which materials will work best to pick up the pollen? texture
6. Which materials will work best to release the pollen? texture

Experimenting with materials for pollination- hands on practice

- Hand out the bag of materials- marble, foil, eraser, pom- pom, pipe cleaners, tape
- Predict – circle those that would be a good hand pollinator – can pick up and drop off the pollen.
- Show how to test the materials – pick up pollen- tap once in the baking soda, drop off – tap three times- cup with a hole in the top over the flower worksheet(evaluating materials)with a black center to show "pollen"(baking soda)

Making a Model- Hand Pollinators

Create a hand pollinator.

We have 2 types of plants. The bucket orchid and jack in the pulpit.

An engineer makes a model and tests their designs out on a model.

Instead of breaking and hurting flowers we will test it using a model. (compare the flowers to the models) jack in the pulpit- and bucket orchid- Show a picture of the flowers so students can visualize.

Design Constraints Pollinators Must....

1. Go in
1. Cannot damage the plant
2. Pick up pollen
3. Come out
4. Hold on to the pollen
5. Release it- tap 3 times

Engineering Design Worksheet

Plan-Look at all the materials. Talk with your partner about ideas, and start with one to draw and label. Record on your worksheet. Label the parts before gathering materials.

Build- gather materials and build a hand pollinator. Try your pollinator design and record results on your engineering design worksheet.

Improve- make a modification to your design and see if it works better.

If there is time, test the 2nd flower following the same process.

Closure- Share

Have groups share about what worked and didn't work.
If they were to do it again what would they focus on?
What materials worked the best.
What were the challenges that they encountered?