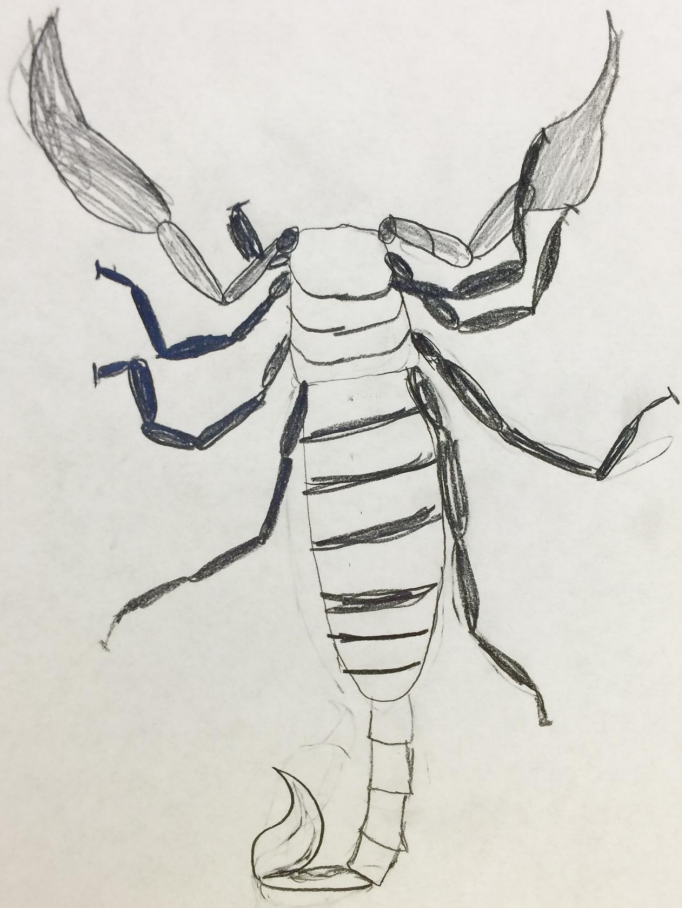
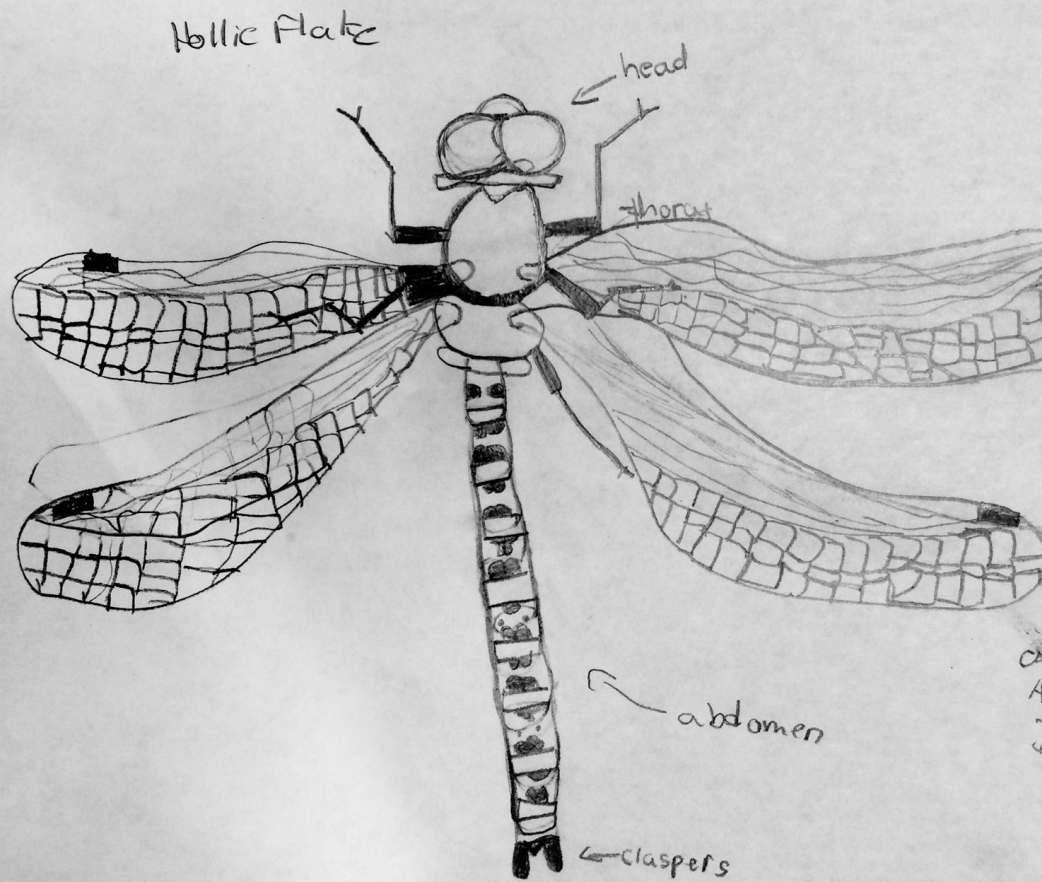


# A New Generation of STEAM





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# Our Story/Background

# What is Integration?

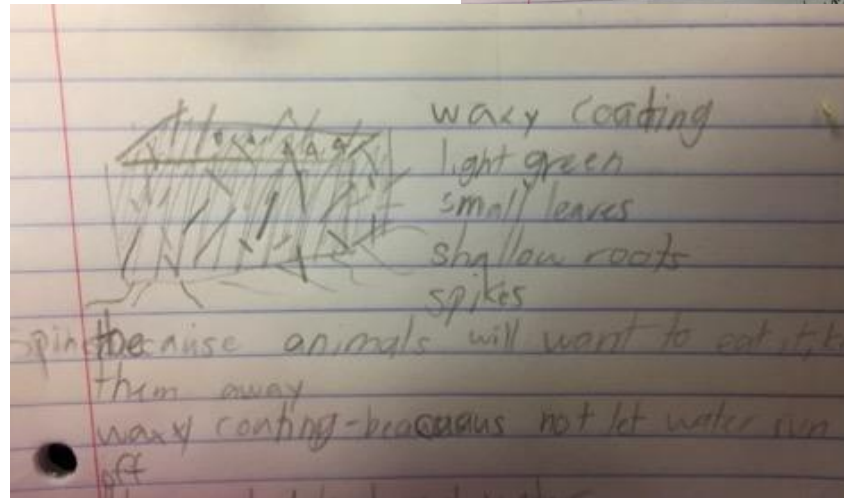
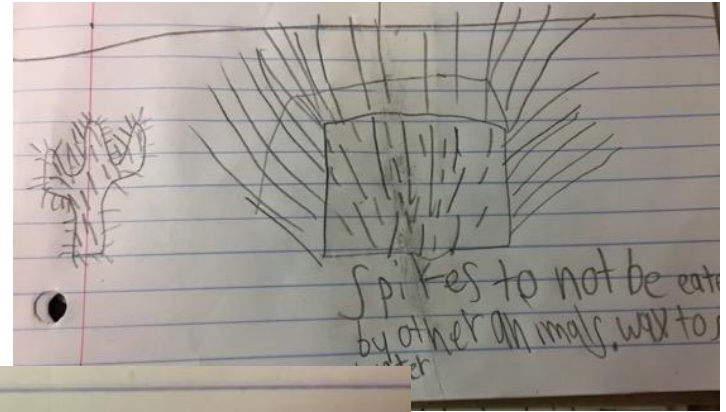
- **One Subject plus- is Integration**
- **A Natural Connection- between subject areas**
- **Prioritize- not equal parts but determined by the lesson goal**
- **Student Learning- always goes back to the standards**



4th Grade

# Desert Plants

- Student why? Survive in sun and heat
- Describe and draw how “plants” will survive using adaptations that they have learned about. Must use three of the following: color, roots, leaves, spines, stems, seasons, waxy, limb, seeds, and stomata
- Each group made their models after they planned it out in their journals.
- Present to class. Ask for their feedback and improve your plant. (Living things change over time.)



# Bird Adaptations

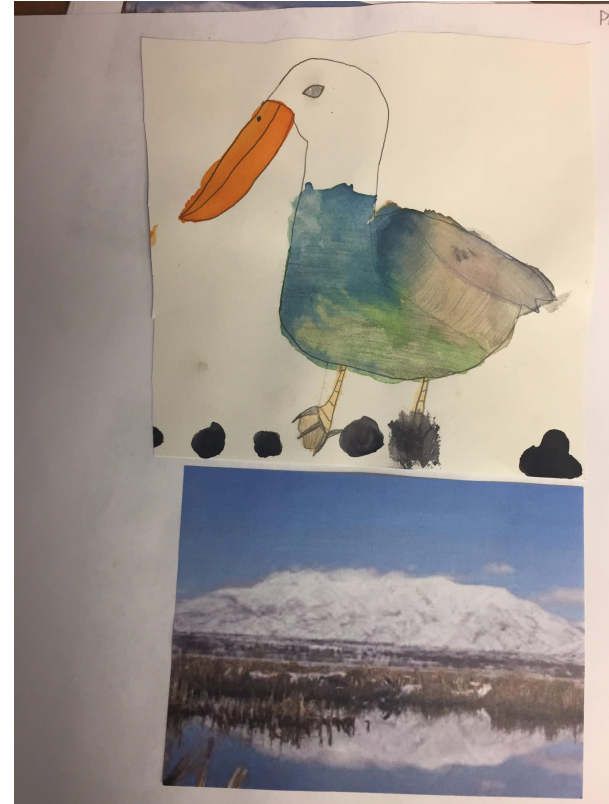
Student Why? Create a bird with the best adaptations

- Pick a habitat- wetland, forest, desert, grassland, etc.
- Beak type- cracking, chisel, spear, hooked, tubular, flat, multi-purpose
- Feet type- climbing, catching prey, swimming, walking, grasping branches, etc.

Science- better understand physical adaptations help animals survive by creating their own bird

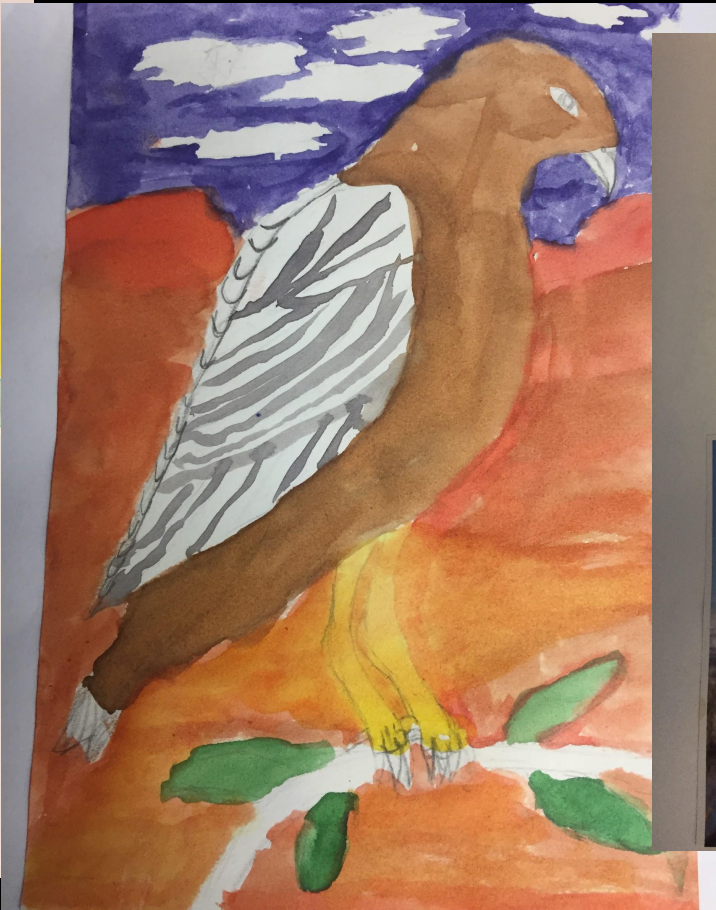
Art- observational drawing, color matching with watercolor paint

Share- describe why adaptations were chosen and take suggestions from a group and modify

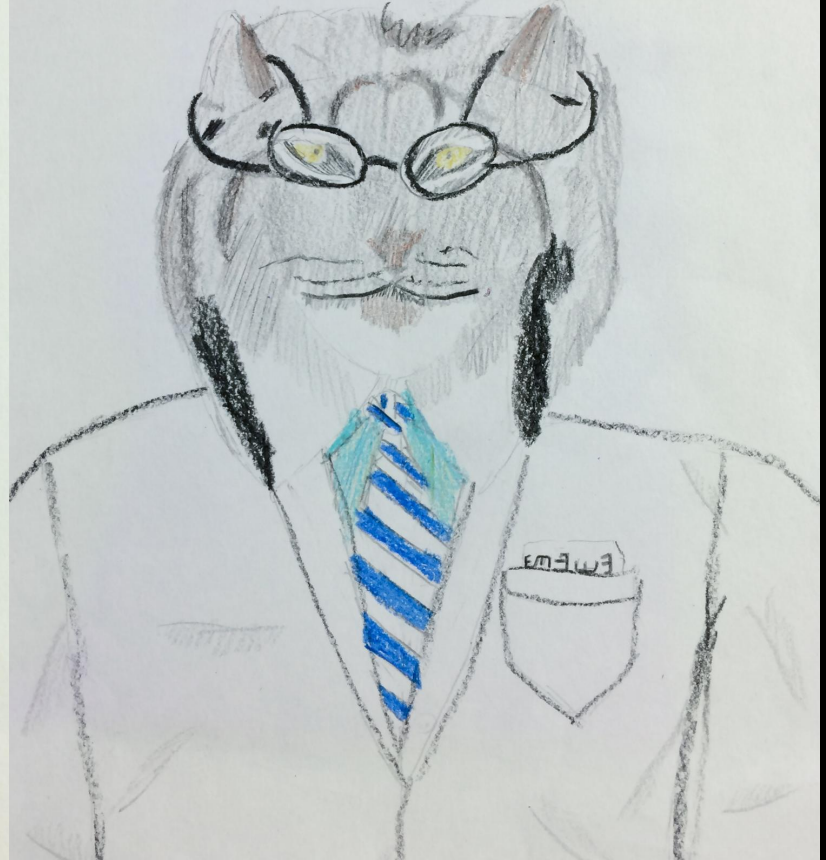




Swan 2-11













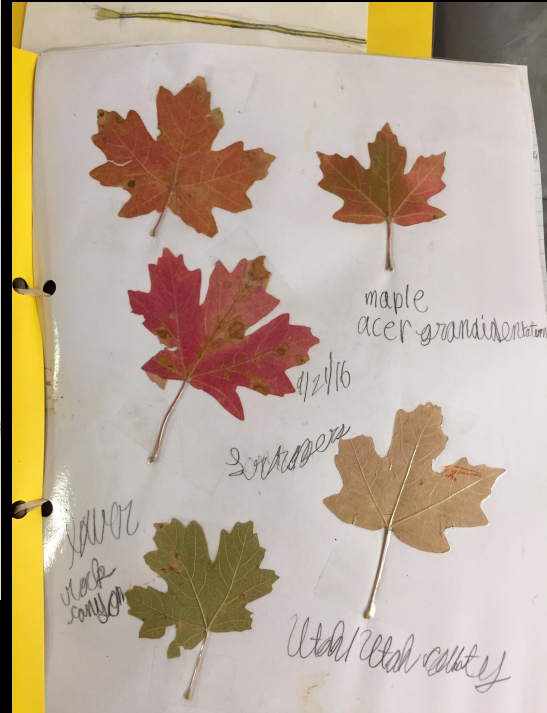
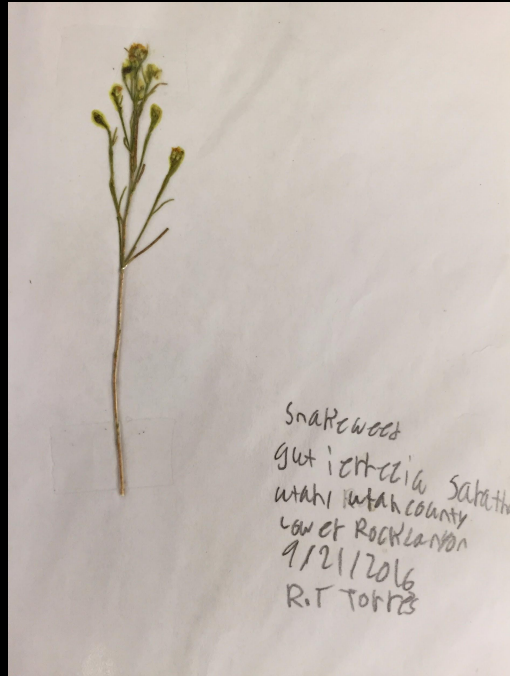


Populus  
Utah, Utah county  
Lower Rock Canyon  
9/21/2016  
E. Allen



Sumac  
*Rhus glabra*  
Utah, Utah County





First Grade

# Collaboration

This is where the magic starts!

- Meet as grade level team to brainstorm ideas about core subjects.
- Team joined by Art Specialist the lessons go through several iterations.
- Shadow Puppet example- Prior lesson with found sound move to found objects. For example: fabric for water or a red dish for the sun instead of a traditional puppet.

# The 4 Levels of Inquiry Instruction

Open Inquiry

No predetermined questions: students propose and pursue their own questions.

Guided Inquiry

No predetermined method: students must determine how to investigate the problem.

Structured Inquiry

No predetermined answer : conclusion based solely on student investigation and a prescribed process.

Confirmation Inquiry

Predetermined questions and answers: students follow the directions for expected results.

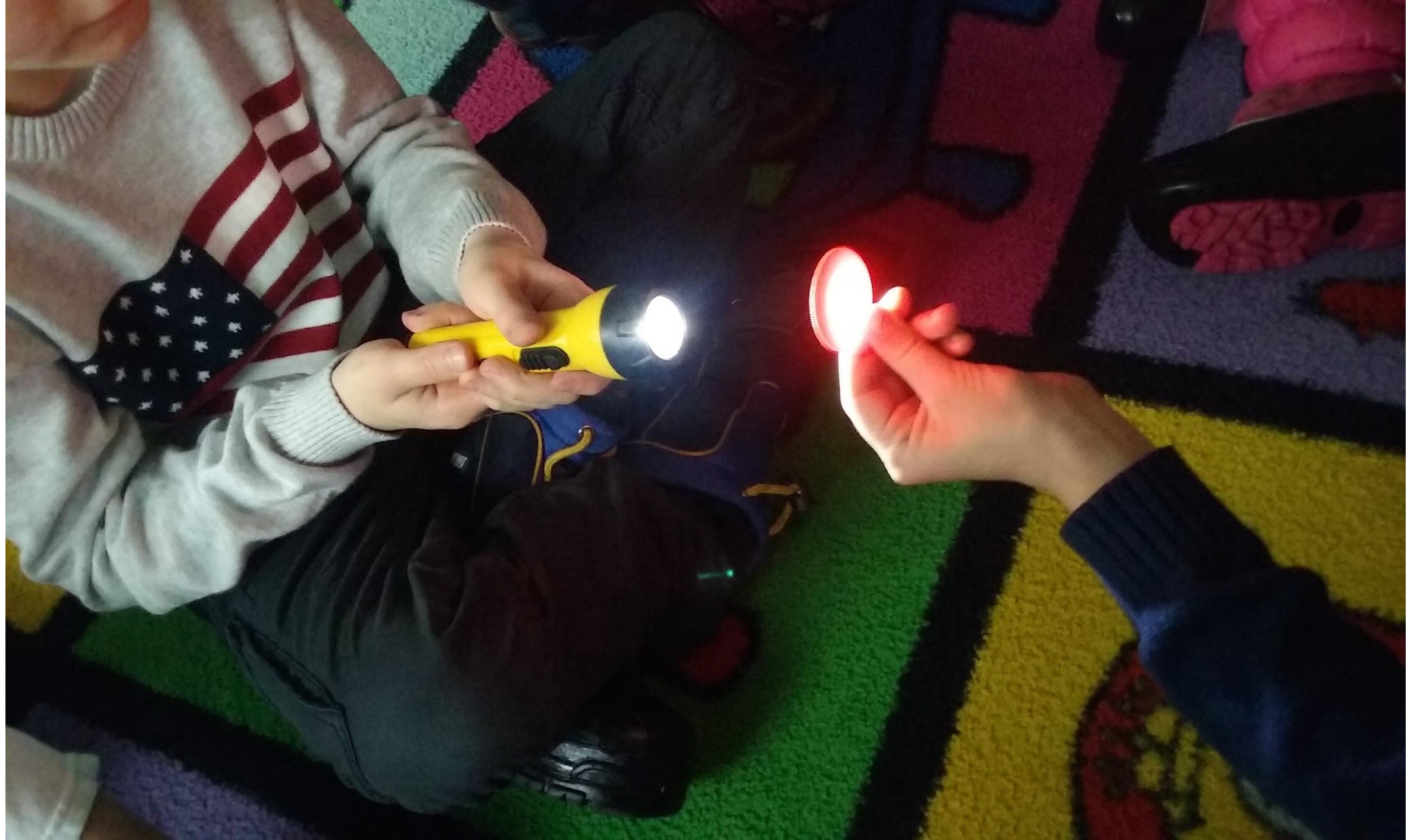
# Shadow Puppets

Student why? Create a puppet show using light and shadow.

- **Visual Arts: transparent or translucent features of various objects and sketch the puppet**
- **Science: light and shadows- Standard 2 Objective 2**
- **ELA: oral language/writing: students wrote the a simple story stemming from their exploration with the materials.**
- **The students explored materials that were transparent, translucent, and and opaque. Through inquiry, and the design process they designed a story with a beginning, middle, and ending, then shared that story through a shadow puppet play.**

( insert photos? Journal photo)











# Engineering Design Process with Shadow Puppets

**This is what it looks like:**

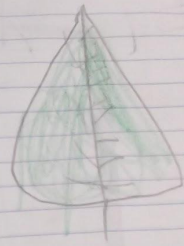
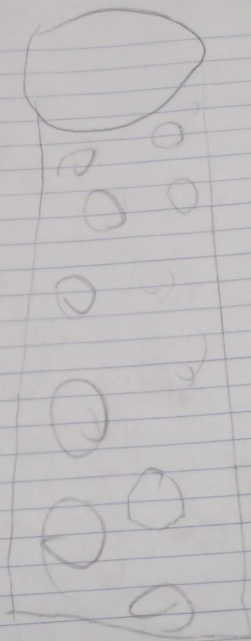
**ASK-** Students-How can you design puppets using found objects that make a shadow or translucent image on the screen? What are my ideas?

**IMAGINE-** Students explore materials with flashlight and box. Watch video example of shadow puppet.

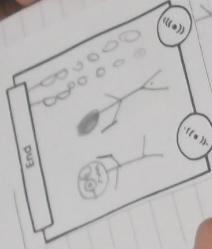
**PLAN-** students asked what do I need? Found objects, characters, a story.

**CREATE-** Students follow their plan and test their ideas.

**IMPROVE-** Work with team to go through steps again, most teams do several iterations.



feathers  
for trees.



(17-1)

MIC

your steps  
an hour  
a day  
a week  
a month  
a year

Eight

years

# Collaboration







# A New Generation of STEAM