# HONEYBEES AND HAMMERS

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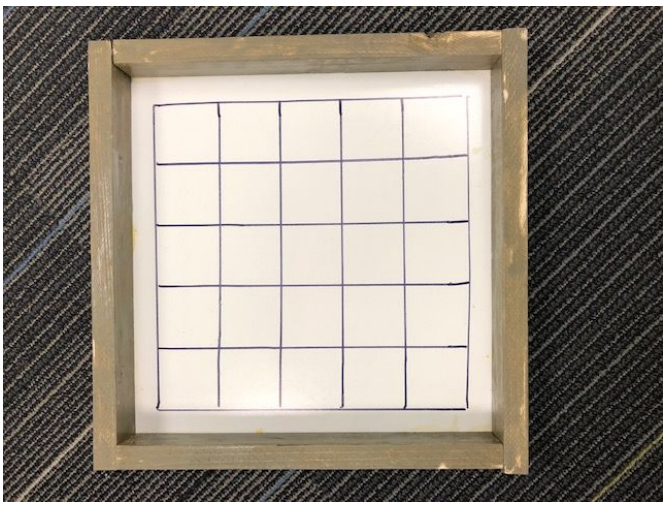
Goals:

1. Introduce first graders to unplugged coding
2. Investigate and learn about honeybees and their importance in our world
3. Design and build a computer coding game box using wood and hammers
4. Learn to program and use Bee Bots

Materials and Resources:

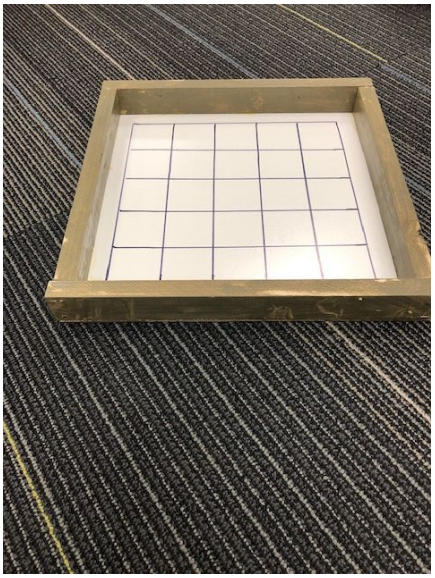
1. Coding Box:
   - 2 pieces of $\frac{3}{4}$ " pine 1 $\frac{1}{2}$ x 13 $\frac{1}{2}$
   - 2 pieces of $\frac{3}{4}$ " pine 1 $\frac{1}{2}$ x 12
   - 1 piece of 13 $\frac{1}{2}$ x 13 $\frac{1}{2}$ " shower board (Lowes)
   - Hammer, nails, sandpaper, stain, safety goggles, gloves, wood glue
   - Sharpie to draw squares on the showerboard



Sanding

Staining

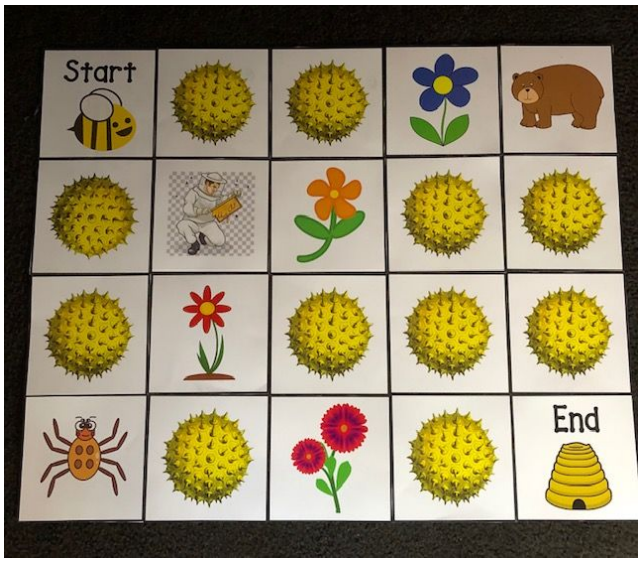
Gluing and Hammering



Finished Product

2. Bee Bot Demonstration (Bee Bots available at: https://www.bee-bot.us)

- Large Mat for demonstration (attached)




As a class, use the large mat to program the Bee Bot to pick up 4 flowers, touch as much pollen as possible and avoid the bear, beekeeper and spider. The Bee Bot is trying to get safely to the hive.

Then split into groups of 3 and use the giant plastic mat that comes with the Bee Bot to put their own white cards down in different combinations and program the Bee Bot to get from Start to End.

** Helpful Hint: Once the kids start the actual unplugged coding, they all need to sit at the bottom of the mat, facing the mat. If not, when they lay out the coding cards, it will be opposite for them and very confusing. Remind them they are coding the Bee and the direction cards should reflect which way the Bee is facing...not the kids.

3. Coding Game:
    - Plastic bee (finger puppet) from Oriental Trading (# 12/5915)

    - Coding Direction Cards (attached)
      Kids lay the white cards on the squares that are drawn in the Coding Box. Then they use the yellow direction cards to move the plastic bee through the Coding Box to get to the hive. Along the way they must visit all 4 flowers in order to get nectar and get as much pollen as they can. They want to avoid the bear, the beekeeper and the spider.