5th grade at Marshall

<table>
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<tr>
<th>Introduce ourselves</th>
<th>9:30-9:35</th>
<th>10:15-10:20</th>
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<tr>
<td></td>
<td>Favorite animal and favorite number between 1-100</td>
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<th>10:22-10:29</th>
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<td>Station 2</td>
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<td>Q and A</td>
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Stations:

1. Phenotype in WT versus mutant (Ally)
   Fish:
   Large tank of about 30 adult zebrafish with all different phenotypes (long fin, spots, Glofish with different colors, WT)

   What does phenotype mean?
   - talk about the meaning of wildtype and have students draw a WT fish in their lab notebooks
   - have the students draw their favorite non-WT fish in their laboratory notebook

2. Fluorescence-what is fluorescence? (Mitch and Morgan)
   Fish:
   Many different colors of GloFish in about 3 tanks
   A tank of brainbow fish (note that these do not fluoresce with the black lights-too weak)

   What is fluorescence?
   - talk about what fluorescence is and have students look at GloFish under blanket with a black light flashlight
   - explain how scientists use fluorescence using brainbow handout and GFP handouts

3. Inheritance (Amelia)
   What is your hypothesis about which parents go with which progeny?
   Fish:
   Easy: Parents look exactly like the progeny-brainbow progeny that match parents,
   Medium: Red and Grey fish that give rise to red and grey progeny
   Hard: Red and yellow fish give rise to orange, red, grey, yellow progeny
Describe what inheritance is?
- let the students come up with a definition
- tell students what inheritance means

Give and example (height)
- tall dad and short mom= I'm medium height
- ask them what other examples of inherited traits are
  - eye color, hair color, skin color, nose shape, diseases

Direct the students attention to the tanks (three on left are babies and three on right are parents of babies)
- Do matching game: parents to babies
- based on inherited traits ~ color, pattern, fin length
- DO together or let them do it with their group
- give answers

Point out
- brainbow fish
- redX yellow= orange

**4. Genotype(Jayce and Alisa)**
Fish: Monohybrid crosses
Tank of progeny with approximately ½ red and ½ grey (red/- X -/-)
Tank of progeny with approximately ¾ red and ¼ grey (red/- X red/-)

Genotype
- what is a gene?
- two copies of each gene-one from mom and one from dad
- recessive and dominant genes
- planned but did not have time: Punnet squares