Punnett Square Activity

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**Lifesize Punnett Square Activity**

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I created this activity in animal science when talking about genetic traits in livestock.  Before this activity students knew about inheritance and a small Punnett Square.  I was looking for an fun way to teach them how to use a large Punnett Square to show the inheritance of two traits.  Attached are pictures that show the set up and large Punnett Square.  Check those out first to get an idea of what the instructions mean!

**Pre-Work**: It is important to explain the following concepts before using this activity.

-Meiosis and Mitosis

-Why there is a chromatid from each parent that come together to make a chromosome

-Genes are located on a chromatid

-How many pairs of chromosomes in different species (30 pairs in cattle, but we are only showing 1 pair in the box)

**Materials:**

Red Spice Drops

Orange Spice Drops

Red Gummy Bears

Yellow Gummy Bears

Red Toothpicks

Blue Toothpicks

Masking Tape

**Set Up:**

Tape off a large Punnett Square on a table.  It needs to be 4 squares by 4 squares (a total of 16).  The spice drops represent one trait, the gummy bears represent another trait.  The red toothpicks are female chromatids and the blue toothpicks are male chromatids.

Red Spice Drops= T horns

Orange Spice Drops= t polled

Red Gummy bear= B black

Yellow Gummy Bear= b red

Have the students write the parents genotype on top of the square with a marker.

**Scenario for students:**

The cow has the genotype TtBb and the phenotype of horns and a black body.  The bull has the genotype TtBb and the phenotype of horns and a black body.  Complete the large table illustrating the inheritance of these two traits.

Write out the combinations that are possible from crossing these two animals.





