* Title
  + Building a Watershed
* Objectives
  + Students will use common household materials to create and model a watershed
* Vocabulary
  + Watershed
  + Water cycle
  + River
  + Tributary
  + Creek
  + Pond
  + Lake
  + Valley
  + Watershed divide/ drainage divide
* Materials
  + Enough for one per group of:
    - Aluminum baking pan (disposable will work just fine) or paint tray
    - Several pieces of paper (for creating hills; newspaper will work best, but printer paper, old magazines, etc. will work as well)
    - Masking tape or painter’s tape
    - Small sheet of plastic to cover the pan (a cut plastic tablecloth or shower curtain will work. White or light colors work best)
    - Blue food coloring
    - Spray bottle
    - Towels or paper towels
    - Something to elevate one end of the pan (a wooden block, a book, etc.)
    - Permanent marker
* Introduction
  + A watershed is an area of land that moves water from high points into lower points like lakes, streams, and rivers, and eventually into larger water bodies like oceans or large lakes.
  + In the water cycle, after precipitation (rain, slow, sleet, and hail) falls, it collects in areas determined by the watershed; not all water goes to the same place.
    - The water cycle is the path that all water follows as it moves around the earth in different states (solid, liquid, and gas)
      * 4 main steps:
        + Collection
        + Evaporation
        + Condensation
        + Precipitation
      * Additional steps:
        + Transpiration
        + Infiltration
  + Watersheds are really big! They contain multiple counties and many miles of land.
  + Explain to students that today you will be building your own model watershed in groups. Watersheds can be hard to visualize; making a model will help you see it better. After models are built, we will spray water onto them to see where the water goes.
* Procedure
  + Split students into groups as you see fit.
  + Crumple several pieces of paper into different size balls and rolls. Place them into the pan and use the tape to tape them into place.
  + Prop one end of the pan up with your wooden block, book, etc.
  + Drape the plastic over the pan so that the entire thing is covered. Gently press the plastic down around the paper.
    - The plastic cover is Earth’s surface. The lumps made by the paper represent mountains and hills, and the areas between them are valleys.
  + Fill the spray bottle and add some blue food coloring. This is your rain. Spray the model in different spots and watch how the water interacts with the model.
    - Where does the water go? Does it all go to the same place? Where do you think the watershed divides (aka drainage divides) might be on your model?
    - Look for distinct features in your model:
      * Rivers, streams, tributaries, creeks: linear flows of downhill-running water
      * Ponds, lakes: low areas where water pools
      * Watershed/ drainage divides: imaginary lines connecting the highest points of a watershed and defining the watershed boundary; rain goes to one side or the other
  + Dry off the model and repeat the building process. This time, before spraying, predict where you think the streams and divides are and mark those areas with a permanent marker. Test your predictions
* Closure
  + How did you decide where to mark your model? What features of a watershed did you recognize? How could you improve your model for next time?