ADDING UP THE DRIPS
GRADES 3-8

MATERIALS
Pencil
Calculator
Cup of water
Drip Math Worksheet (included on following page)

BACKGROUND INFORMATION
Water is a key component to all life on earth. 55-78% of our body weight is water. Water also plays a crucial part in many of our everyday activities. In one year, the average American residence uses over 100,000 gallons (indoor and outdoor). Most Americans use about 100 gallons per day. On its surface, this might not seem like a concern – after all, we live on a planet that is 70% covered with water! But how much water do we really have? 97% of the world's water supply is saltwater – leaving only 3% usable freshwater. And close to two thirds of the Earth's freshwater is inaccessible, trapped in glaciers. These activities are designed to increase awareness of how much water we have access to, how much water we use, and ways we can conserve this precious resource.

INSTRUCTIONS
1. Watch the "Use Less Water" music video.
2. Review the lyric: "Many places on earth have rivers running dry; consumption is one reason why."
3. Discuss the idea of water as a precious natural resource. How necessary is water to our daily lives? Do we use water responsibly? Why or why not?
4. Encourage students to recall ways to conserve water as suggested by the song. The class may add to the list their own ideas.
5. Discuss: How much difference can conserving small amounts of water make? Tell the class that you will use a drop of water to investigate water conservation.
6. Dip your finger in a cup of water and create a single drop of water. Show the class this single drop and say that a single drop of water like this might come from a leaky faucet. It seems like such a small amount that people might not even bother to fix it.
7. Discuss: An average drip of water contains about ¼ of a milliliter. Can this amount make a difference? What if it was dripping all day long?
8. Individually or in groups, guide students in working through the Drip Math Worksheet.
9. Discuss: Can just one drip make a difference? How much impact does one little drip have? How much can conservation practices and reducing water usage make a difference?

SOME NUMBERS TO PONDER
An average drip of water contains about ¼ of a milliliter. It takes 4,000 drips to make one liter of water. 15,140 drips are in a single gallon.

Adapted from http://water.usgs.gov/edu/activity-drip.html

DRIP MATH WORKSHEET

Name _____

An average drip of water contains about ¼ of a milliliter. It takes 4,000 drips to make one liter of water. 15,140 drips are in a single gallon. There are 86,400 seconds in a day.

If you assume 1 drip per second, how much water is wasted in these scenarios? Answers can be calculated for amount of water in liters or amount of water in gallons as deemed appropriate by teacher. Answers for Liters and Gallons should round to the nearest tenth, with the appropriate unit circled. Show your calculations for each scenario in the spaces below!

One home with a single leaky faucet left on for a single day =   _____ drips

_____ Liters or Gallons

One home with three leaky faucets left on for a single day =   _____ drips

_____ Liters or Gallons

Five homes each with five leaky faucets left on for a single day =   _____ drips

_____ Liters or Gallons

Ten homes, each with three leaky faucets, left on for one week =   _____ drips

_____ Liters or Gallons

Short answer: In your own words, what difference can a drop of water make?

DRIP MATH WORKSHEET (ANSWER KEY)

An average drip of water contains about ¼ of a milliliter. It takes 4,000 drips to make one liter of water. 15,140 drips are in a single gallon. There are 86400 seconds in a day.

If you assume 1 drip per second, how much water is wasted in these scenarios? Answers can be calculated for amount of water in liters or amount of water in gallons as deemed appropriate by teacher. Answers for Liters and Gallons should round to the nearest tenth, with the appropriate unit circled. Show your calculations for each scenario in the spaces below!

One home with a single leaky faucet left on for a single day = **86,400** drips

21.6 Liters, 5.7 Gal

One home with three leaky faucets left on for a single day = **259,000** drips

64.8 Liters, 17.1 Gal

Five homes each with five leaky faucets left on for a single day = **2,160,000** drips

540 Liters, 142.6 Gal

Ten homes, each with three leaky faucets, left on for one week = **18,165,000** drips

4541.25 Liters, 1199.8 Gal