



## OoR Tech – Session Plan, SPRK In Water

rev 20171206

Grade Range: All

Prerequisite: SPRK Robot Intro

(10mins)

Talk to Children about things that float and things that sink. Touch on the concept of why some items float and why some items sink (density and displacement).

Use props to show how objects of different weight but same density both float (two different sized pieces of wood for example) or both sink (two different sized rocks for example).

Move to comparing the robot vs a rock of similar size. Place one robot in water table to show how it floats vs how a rock of similar size sinks.

Ask children why the robot's electronics can be in the water even though electronics usually don't mix well with water. Introduce the concept of permeability by showing how the robot's shell doesn't allow water to pass but other types of materials do allow water to pass through.

(10mins)

Allow kids to drive SPRK in the water table to get a sense of what it's like compared to on land. Ask children to explain if SPRK sinks or floats, also ask if it drives as fast in the water as on the ground. Ask children why the robots move slower in the water vs ground to introduce the concept of friction.

EXTRA (10mins)

Create a simple program to roll the robot forward. Have kids measure the distance the robot rolls in water when program is played.

Then repeat on different surfaces (tiled floor, carpet etc).

Build upon the concept of friction to explain why the results are different given the same program / robot.

(5-10mins)

Question and summary of what we learned.

Repeat terms "Density, Displacement, Permeability, Traction

Only the Drive Panel is used in this session

