ROCK PAPER SCISSORS PROBABILITY

Purpose
• To explore the relationship between theoretical and experimental probability.

Division – Primary, Junior

Equipment
• Pencils and paper

Set-up
• Divide students into groups of two and ask each group to find an open space.

Activity
• Explain to students the general rules of Rock Paper Scissors and model physical activity movements to represent each action (e.g., <u>Rock</u>: Crouch in a ball; <u>Paper</u>: Stretch arms and legs out wide; Scissors: Stand in a forward lunge with arms in front of body).
• Ask students to create a simple tally chart to record their results, including names, result of each round (e.g., win, lose, tie) and the action each student selected.
• For each round, students jump on the spot three times and on the third count, perform one of the actions.
• Ask students to play 20 rounds and record the result of each round.

Modifications
• Activity can include questions before and after (e.g., <u>Pre-activity</u>: "How many rounds do you think you will win?" <u>Post-activity</u>: "How many rounds did you actually win?").
• Activity can include students reading and displaying data using graphs.
• Instead of Rock Paper Scissors, students can roll two dice, record results, and answer questions (e.g., <u>Pre-activity</u>: "How many times will the dice add up to an even number?" <u>Post-activity</u>: "How many times did this actually happen?"). Students can perform physical activity movement after each round that match the number on the dice.

Questions for Student Understanding
• What was the resulting probability of each movement? How often did each movement win? Use a fraction to describe.
• If you played again, would the results be the same? Why or why not?
• Describe the difference between experimental and theoretical probability using your game as an example.
• <u>Junior</u>: What is the theoretical probability of winning using each movement? Use a fraction to describe.