

Year Level: 5/6

Key learning area: Mathematics

What's the Chance of Rain?

Objectives

By the end of this lesson the student will:

- use and interpret numerical statements which quantify chance
- use language of chance in everyday situations.

Extension activity outcomes

By the end of this lesson the student will:

- design and prepare surveys and experiments to answer questions or test conjectures and predictions.

Background

There are long-term events that happen year after year and affect the rainfall pattern. The Bureau of Meteorology analyses the past patterns and tries to predict the future patterns. The predictions are presented as probabilities (chances) and published to help people make informed decisions.

The three wheels (pie charts) you'll see on the website given in the Resources section below tell you what the chance of rain is during different climatic events.

An El Niño climate event is when there is a greater chance of low rainfall and a smaller chance of high rainfall. A La Niña climate event is when there is a greater chance of high rainfall and smaller chance of low rainfall.

Knowing when it is more likely to rain helps farmers to plan ahead and reduce the risk of a bad year.

Resources and actions

You'll need to access the content at the following internet location: http://www.bom.gov.au/lam/Students_Teachers/climprob/rainprbsec.shtml. If the internet is not available to students, print off this lesson plan and worksheet, and have the students cut out pie charts and make tops for use in the activity. For tops you'll need toothpicks, scissors and prints of the pie charts (see worksheet).

Print off the student's worksheet and photocopy one for each student: http://www.bom.gov.au/lam/Students_Teachers/climprob/ws2.htm.

Sheets of paper for student's to use in designing their survey (Q5)

Ask the students to carry out the activity from the worksheet then go over their results at the end of the class.

Solutions

1. Student's answers will vary. Some student's may not record one letter after

another. To have the letters presented in one long sequence will help in getting across the fact that each spin is an independent event. Student's will see that even though each state has an equal chance of coming up, they actually come up in a random sequence.

2. Student's answers will vary. The totals of all three states should add up to 100 for a quick check.
3. *During a Normal year, there is a **33%** chance of high rainfall. A **33%** chance of low rainfall and a **33%** chance of normal rainfall.* The students may use other expressions to explain the equal chances that each state has.
4. Each side of the coin has an equal chance of coming up, so it is a fair way to decide who will shoot first.
5. Student's approaches and responses will vary. Have them share their work at the end of class.
6. Any one of the four colours may come up at each spin. The result of each spin is independent of the result of the previous spin.
7. It is possible but highly unlikely because the chances of any colour coming up at least once are very great

Time

15 - 20 minutes (not including extension activity)

Assessment Task

Questions 2, 3 and 4 and Question 5 for the Extension activity.

Support/Extension Activity

Have the students total the class results to highlight how the actual results compare with the probabilities when the results are larger.

Questions 5, 6 and 7 can be used for further investigation and require internet access or prints of the relevant web pages.