BLOOMSM4TH

Makes Maths Fun

Level 7

CHANCE & PROBABILITY

Bloomsmath is a comprehensive mathematics program which provides a fun way for every student to be learning to the best of their ability.

By Rachel McCann (B.Teach; B.Ed Hons; M.ED (Special Ed.)

BLOOMSM4TH Makes Maths Fun

Level 7

Chance & Probability

Level 7 is designed for students in their seventh year at school often called Year 6. Students will conduct chance experiments and assign probabilities as values between 0 and 1 to describe their outcome.

Knowledge: Students will match events to their probability fractional equivalent to solve a riddle.

Students who demonstrate proficiency in this activity move on to Comprehension.

STOP

Students stop here as they require additional teacher support to master this activity.

Comprehension: Students will provide fractional chance results for given data.

Students who demonstrate proficiency in this activity move on to Application.

STOP

Students stop here if time has run out or they require additional support with this activity.

Application: Students create a graph of the season in which their birthday falls using a standard calendar and complete related chance questions.

Students who demonstrate proficiency in this activity move on to Analysis.

STOP

Students stop here if time has run out or they require additional support with this activity.

Analysis: Students will use a die to create a set of data to create probability fractions.

Students who demonstrate proficiency in this activity move on to Synthesis.

STOP

Students stop here if time has run out or they require additional support with this activity.

Synthesis: Students will order pie graphs based on the likelihood of an event occurring.

Evaluation: Suggested questions provide a starting point for discussions related to Chance and Probability.

Students may complete more or fewer activities for each learning outcome depending on the time allocated and their strength in the area being covered.

All students should participate in the Evaluation discussion to encourage the use of mathematical language, logical reasoning and reflection on that which they have completed.

Name: _____

Knowledge

Starting at the word Impossible match each fraction to its chance of occurring and then to the next term for probability from Impossible to Certain to draw a picture.

Chance & Probability - Level 7 - Students will collect chance data and assign probabilities from 0 to 1.

Knowledge
Comprehension
Application
Analysis
Synthesis
Evaluation

BLOOMSMATH

Let's Try This Again

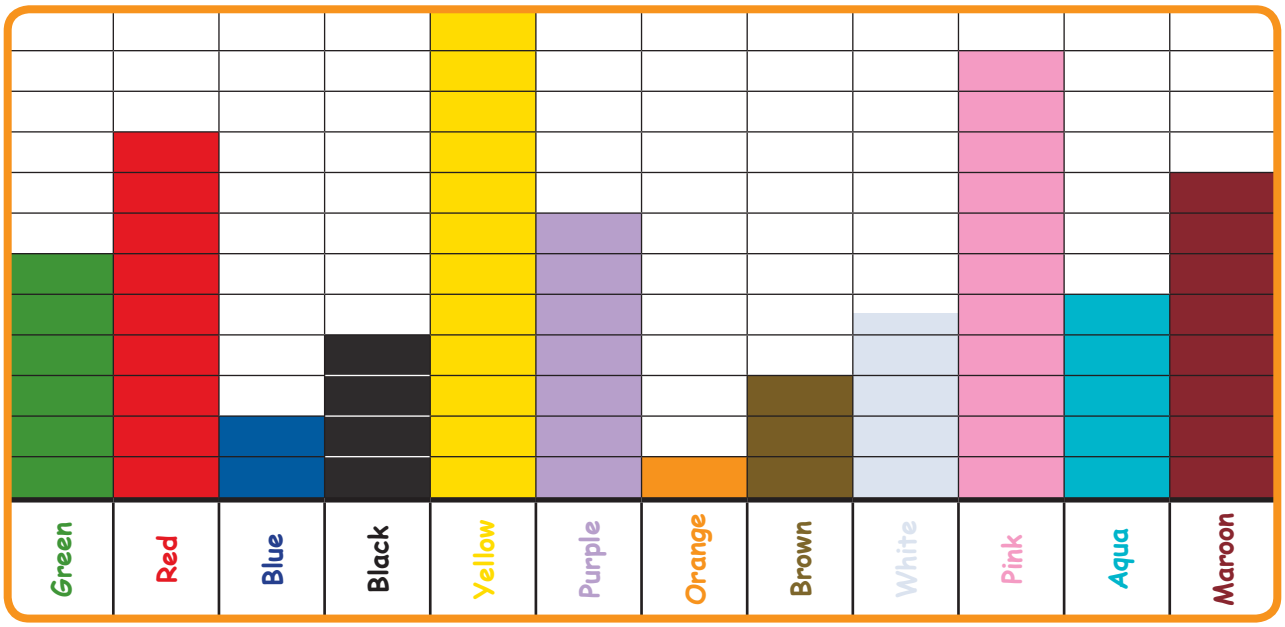
Progress To Comprehension

Name: _____

Comprehension

A bag contains 72 balls. Use the graph below to find the chance of drawing a ball of each of the colours given as a probability fraction to solve the riddle. Ie. The chance of drawing a Red ball is 9/72 which is 1/8 = T.

Why didn't the young boy study for his mathematics probability test?



Rainbow	Orange

Blue	Brown	Green	Red	Orange	Yellow

Red	Purple

Red	Brown	White	Orange

Rainbow	Pink	Aqua

Maroon	Rainbow	Brown	Green	Maroon	Orange	Aqua

A	C	D	E	H	I	K	N	O	S	T	W
1/24	1/9	1/6	1/72	0/72	11/72	1/16	1/12	7/72	5/72	1/8	1/36

 Let's Try This Again

 Progress To Application

Name: _____

Application

Survey 10 people to create a graph of the month in which their birthday falls. *(Record the actual date as you will need this for the Analysis activity).* Answer the questions below.

January	February	March	April	May	June	July	August	September	October	November	December

1. What is the chance that someone has a birthday in the first half of the year?

2. What is the chance that someone has a birthday in July?

3. What is the chance that someone has a birthday in Spring?

4. What is the chance that someone has a birthday in March?

5. What is the chance that someone has 2 birthdays in the same year?

6. What is the chance that there are no birthdays in November?

7. What is the chance that there are no birthdays in Winter?

8. What is the chance that your birthday is the 1st one of the year?


Let's Try This Again


Progress To Analysis

Name: _____

Analysis

If an Australian woman is planning to have a 'spring' baby she will need to give birth after September 22nd. Using the table below of the spring and autumn equinox and the summer and winter solstices for Australia see if you can work out which season the people surveyed previously birthday's fall and, using the internet, whether this was the same season in which they were born

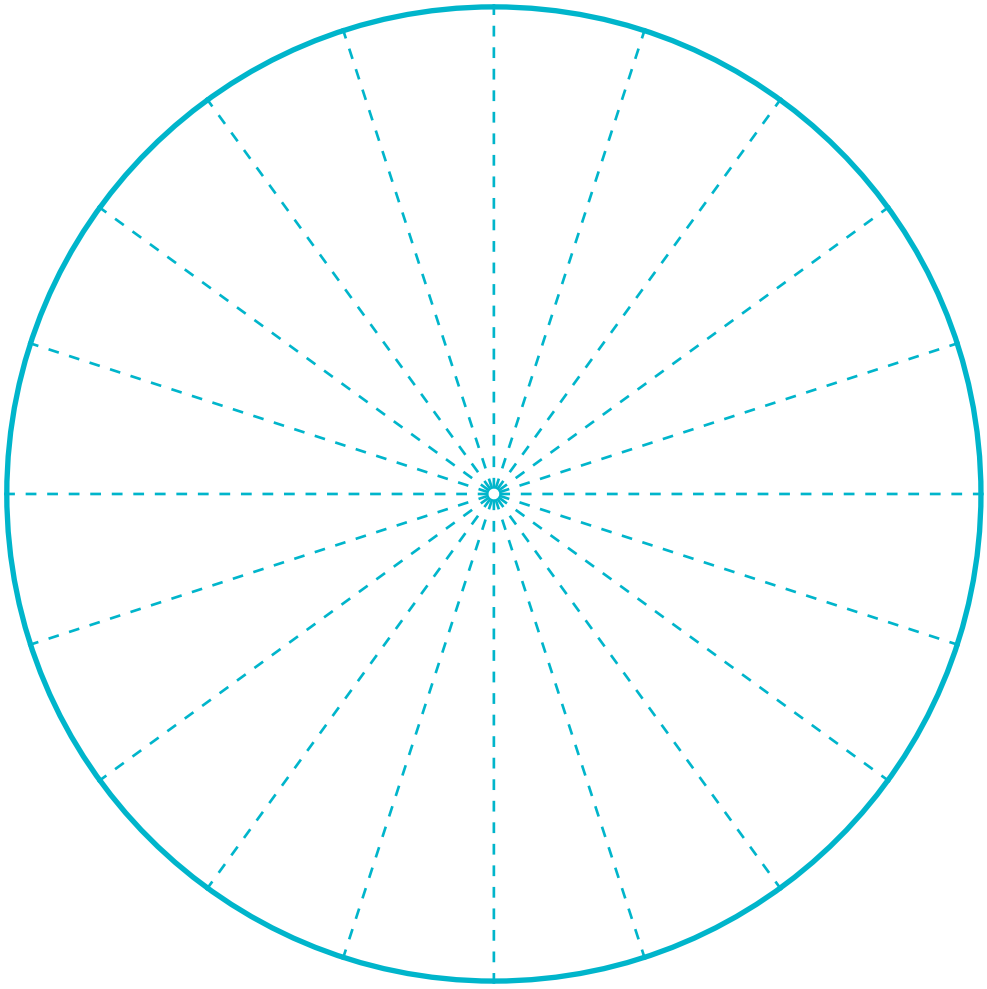
Autumn Equinox	**March 20**	**06:49 GMT**
Winter Solstice	**June 21**	**00:57 GMT**
Spring Quinox	**September 22**	**16:30 GMT**
Summer Solstice	**December 21**	**12.42 GMT**

Now justify whether it is equally likely that a randomly picked birthday (not necessarily someone in their class) will occur in spring, summer, autumn, or winter this year? Make sure you show all your working for solving this problem.

Name: _____

Synthesis Part A

Using the given information to colour each pie chart. Then, using a split pin, add a spinner to each and see if the data is correct.

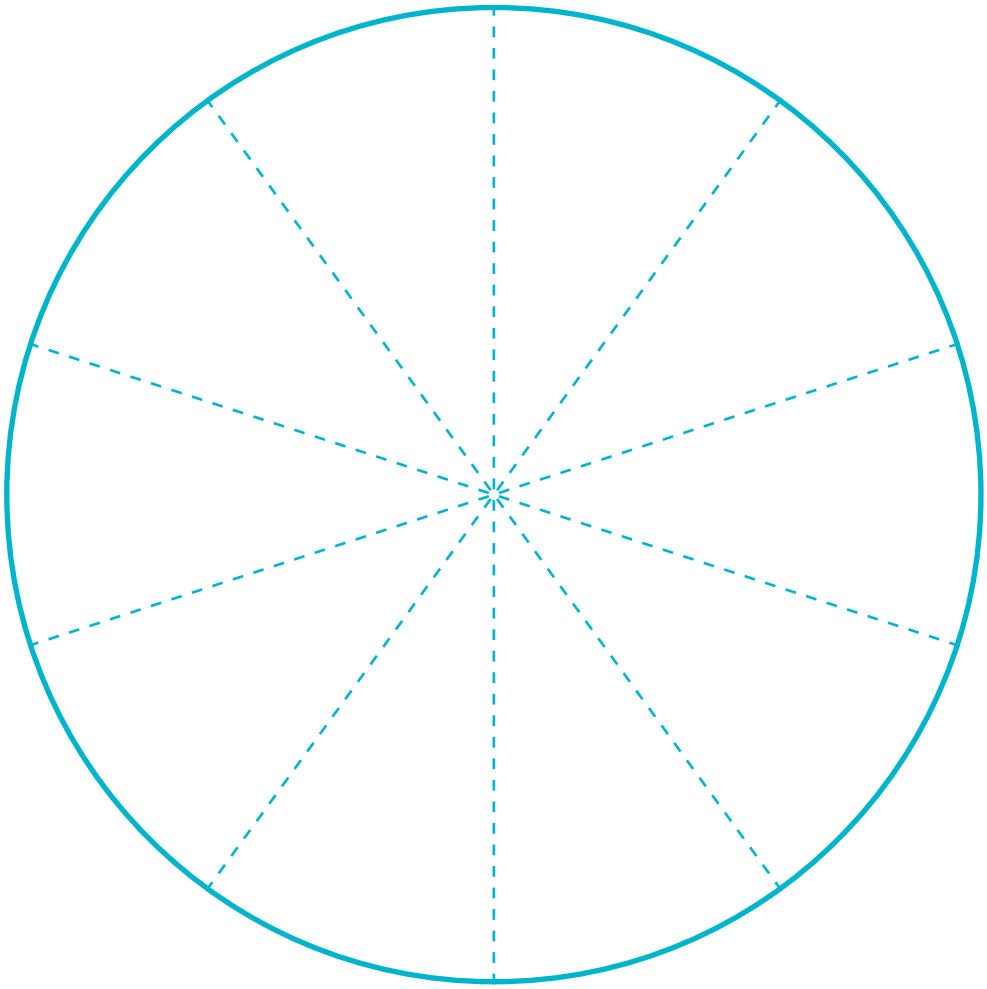


1. There is a 30% chance of someone spinning yellow.
2. There is a 1 in 10 chance of spinning blue.
3. There is a 4/10 chance of someone spinning green.
4. There is 10% less chance of someone spinning black than spinning blue.
5. There is half as much chance of someone spinning red than someone spinning green.

Colour	Yellow	Blue	Green	Black	Red
Number of spins / 50					
Actual % result for each colour being spun					

Name: _____

Synthesis Part B



1. It is impossible to spin white on this wheel.
2. It is equally possible to spin red or green.
3. It is half as likely to spin blue as red or green.
4. There is more chance of spinning blue than any other colour.

Colour	White	Red	Green	Blue
Number of spins / 50t				
Actual % result for each colour being spun				

Evaluation

The following questions and activities are provide as a starting point for fun discussions related to Chance & Probability. During these conversations students will have an opportunity to use appropriate mathematical language in its correct context, to engage in reflection on the Chance & Probability activities they have completed and to use logical reasoning to tie their in-class mathematics to its everyday context.

In which season do most birthdays fall?

In which season do the least birthdays fall? Why might this be the case?

Is it easier to deal with %, fraction or decimal chance of an event occurring or terminology such as even chance or no chance?

Have students create pie charts for other students to colour based on the information provided.

Discuss a fair test versus a baised test such as when spinning the spinner if the hole was off centre.

Discuss and test whether it makes a difference if the 3 blue sections are together or spaced around the circle for how often these are landed on.