Edward Peake Church of England Middle School			
Topic: Sets and Probability	**Year: 7**	**NC Strand:**	**Data**

What should I already know?

- How to solve problem in context
- How to sort data using tables and diagrams
- Understand and use decimal and fraction number lines
- Know decimal and fraction number bonds to 1

What will I know by the end of the unit?

- How to identify and represent sets
- How to interpret and create Venn diagrams
- How to understand and use the intersections of sets
- How to understand and use the union of sets
- How to understand and use the compliment of a set
- Know and use the vocabulary of probability
- How to generate sample spaces for single events
- How to calculate the probability for a single event
- How to understand and use the probability scale
- Know that the sum of probabilities for all possible outcomes is 1

Vocabulary

|			
Universal set	Intersect	Even	Outcomes
Inclusive	Complement	Unlikely	Simplify
Event	And	Certain	Equivalent
Member	Element	Random	Equally Likely
Set	Or	Bias	Scale
Venn diagram	Both	Event	Fair
Intersection	Not	Sample Space	Equivalence
Mutually Exclusive	Impossible	Possibilities	Whole
Union	Likely	Event	Sum

Investigate/Homework tasks

- Homework will be set by your teacher using google classroom
- You should complete at least 30 minutes of maths tasks using the website and log in provided by your teacher. Please attend help sessions if you do not have access to the internet at home
- Additional work you could complete:
  - Find out more about the meaning of the vocabulary list using http://www.amathsdictionaryforkids.com/
- To challenge yourself: Answer the key questions to deepen your knowledge

Key Information/Diagrams

Venn Diagrams

	A	B	A' Complement of A
B' Complement of B	A ∪ B A union B	A ∩ B A intersect B	
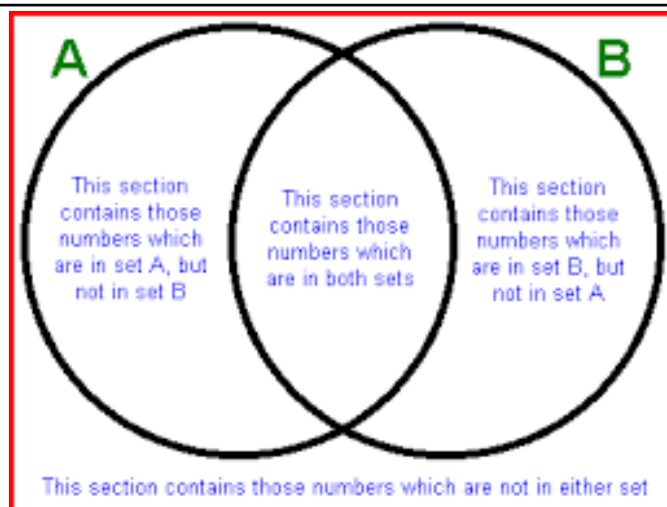
Sample Space Diagrams
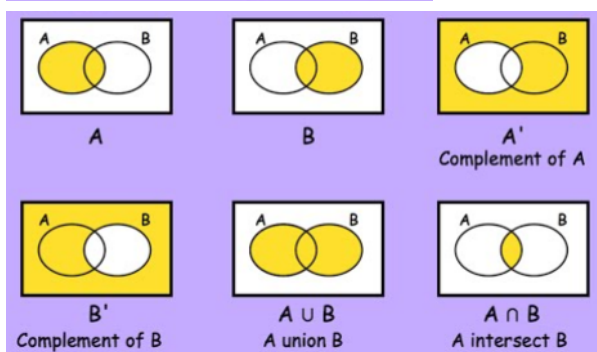
Dice 1

+	⚀	⚁	⚂	⚃	⚄	⚅
⚀	2	3	4	5	6	7
⚁	3	4	5	6	7	8
⚂	4	5	6	7	8	9
⚃	5	6	7	8	9	10
⚄	6	7	8	9	10	11
⚅	7	8	9	10	11	12

Dice 2 / Total Score

P(8) =

P(9) =

P(even) =

P(0) =

P(more than 7) =

P(3, 5 or 10) =

Key Questions

What makes a group of objects a set? Do sets just have to be numerical? Can you have a set with an infinite number of elements?	How many circles or ellipses are needed in a Venn diagram? Do we always need a box around the circles/ellipses? Why or why not? Do the circles/ellipses always need to overlap? Why or why not?	What's the same and what's different about the following Venn diagrams? Why do you think we use different Venn diagrams for different problems? Do all sets intersect? What does the overlapping region represent?
What's the same and what's different between the union of sets and the intersection of sets? What does the union of two sets look like if they have no intersection? What's the same and what's different about A ∪ B in these situations?	Do all sets have a complement? What is the relationship between the complement of a set, the set itself and the universal set? Can a set whose elements are not numbers have a complement?	What is the difference between 'almost certain' and 'certain'? Give me examples of events that are 'certain' to happen and those that are 'almost certain'. Give an example of an experiment with two outcomes that are equally likely. Give an example of an experiment with two outcomes that are not equally likely.
How do you know you have a complete sample space? How does a sample space help you to work out whether something is equally likely to happen or not? If a sample space has just two possible outcomes, does this mean they are equally likely? If a sample space has 12 outcomes, does this mean they are equally likely?	Is $\frac{25}{100}$ a larger probability than $\frac{1}{4}$? Explain your answer. What does 'random' mean? Is the probability of rolling a 6 on a dice always $\frac{1}{6}$? Why or why not?	Can a probability be 120%? Why or why not? Why can't a probability be less than 0? Why do the sum of probabilities for all possible outcomes add up to 1? Why not 2? or 100? Why are 100 and 100% different?
Why does the probability scale end at 1? What is the probability of an impossible event? If the probability of two events are marked on a probability scale, how can you tell which is the more likely?		