Edward Peake Church of England Middle School		
Topic: Number Sense	**Year: 8**	**NC Strand: Number**

What should I already know?
• How to use the properties of addition and subtraction • How to use mental strategies to solve addition and subtraction problems • How to apply the properties of multiplication and division • How to understand and use multiples • How to understand and use factors • How to multiply and divide integers and decimals by powers of ten • How to multiply by 0.1 and 0.01 • How to convert metric units

What will I know by the end of the unit?
• How to round numbers to powers of 10, and 1 significant figure • How to round numbers to a given number of decimal places • How to estimate the answer to a calculation • How to understand and use error interval notation • How to calculate using the order of operations • How to calculate with money • How to convert metric measures of length • How to convert metric units of weight and capacity • How to convert metric units of area • How to convert metric units of volume • How to solve problems involving time and the calendar

Vocabulary			
Round	Estimate	Priority	Metric
Significant	Over estimate	Index	Metre
Power	Under estimate	Indices	Prefix
Nearest	Root	Change	Kilo
Integer	Discrete	Deposit	Milli
Number line	Continuous	Interest	Centi
Decimal point	Bound	Debit	Area
Decimal place	Operation	Credit	Perpendicular
Significant figure	Order	Balance	Units
Square unit	Dimensions	Cubic units	12-hour clock
24-hour clock	Week	Year	Leap year

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

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Key Questions

How can you tell how many significant figures a number has? How do you identify the most significant?
What's the same and what's different about rounding to the nearest (e.g.) hundred or thousand?
Can 0 be an answer when rounding a number?

How many figures does (e.g.) 36.514 have after the decimal point? To how many decimal places is it given?
What's the same and what's different about rounding (e.g.) 31.57 to 1 significant figure and rounding it to 1 decimal place?

Why is it useful to make an estimate before doing a calculation?
If both numbers you use when estimating the answer to a calculation are larger than the original numbers, will your estimate be an overestimate or underestimate?

What is the smallest number that rounds to (e.g.) 16 to the nearest integer? Why isn't 16.4 the largest number that rounds to 16 to the nearest integer?
What's the difference between $<$ and $\leq$? How does this affect how we write error intervals?

Why do (e.g.) $11 + 7 - 4$ and $11 - 4 + 7$ have the same answer?
Which pairs of operations have equal priority in calculations?
Will (e.g.) $\sqrt{9} + \sqrt{16}$ and $\sqrt{9 + 16}$ have the same answer? Why or why not?

How do you use a calculator to find a percentage of an amount?
What's the difference between credit and debit?
How many decimal places should I round to when doing a calculation with money in pounds? What if the calculator shows an answer like 6.7 pounds?

What is the difference between the prefixes kilo and milli?
Why do we need two prefixes that both mean 1 000?
How do you know whether to multiply or divide when converting metric units?
Why is (e.g.) 6.4 cm not equal to 6.40 mm?

What is the difference between multiplying an integer and a number with decimal places by 10/100/1 000?
What's the difference between a kilogram and a kilometre
How do you know whether to multiply or divide when converting metric units?

Why is it that (e.g.) $1\ \text{cm}^2 \neq 10\ \text{mm}^2$?
How do we find the area of a...? What happens to all the dimensions if we change them from (e.g.) m to cm?
Why can't we multiply 30 cm by 5 m without converting first?

How do you calculate the volume of a cuboid/cube?
What happens to all the dimensions if we change them from (e.g.) m to cm?
Is there a connection between volume and cube numbers?

To find the amount of time between (e.g.) 9:40 and 11:25, why can't you just do 11.25 – 9.40 on a calculator?
Which months have 30 days? How can you remember these?
How can you tell if a time is given in 12 or 24 hour clock?