Subject:	Math as a 'universal language'. Common Core Maths in English, English in Maths
Aims:	Familiarizing students with the basic English vocabulary from several areas of mathematics (number, algebra, geometry, trigonometry, probability, ratio and proportion). Practicing students' skills with the math exercises.
Assumed knowledge:	Students will understand and be able to use the language, identify symbols and notation of mathematics
Anticipated problems:	Students may have problems with using the new vocabulary
Teaching aids:	Online Video Teaching; worksheets

Sources:
https://www.youtube.com
www.mathsisfun.com
http://www.coolmath.com/
https://en.wikipedia.org
https://riddlesbrainteasers.com
http://mathforum.org
http://www.educationquizzes.com

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Triangles

Scalene [ˈskeɪ.liːn] **Triangle** has no equal angles and no equal sides
Isosceles [aɪˈsɔsɪliːz] **Triangle** has two sides of equal length and two angles of the same measure
Equilateral [iː.kwɪˈlæt.ər.əl] **Triangle** has all sides the same length and all angles measuring 60°
Acute [əˈkjuːt] **Triangle** has all three angles measuring less than 90°
Right Triangle has one angle measuring exactly 90°
Obtuse [əbˈtjuːs] **Triangle** has one angle greater than 90°
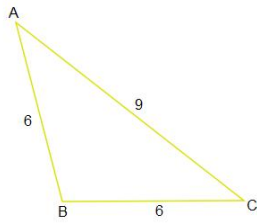
Exercise 1
Draw a proper figure:

an acute triangle   a scalene triangle   a right triangle

Exercise 2
Which of the following correctly describes this triangle?

A

9

6

B   6   C

A. It is a right isosceles triangle
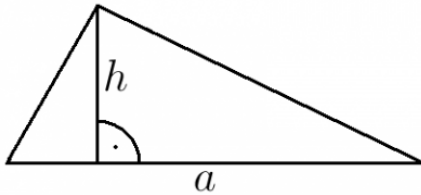B. It is an obtuse isosceles triangle
C. It is an obtuse scalene triangle

Exercise 3

Which of the following is NOT possible?

A An obtuse isosceles triangle

B An acute isosceles triangle

C An obtuse equilateral triangle

D An acute equilateral triangle

Exercise 4

The area of the triangle is 22.5 units. The height h is 5. What is the length of the base of the triangle?

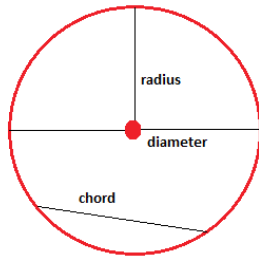A 5   B 7   C 8   D 9

Exercise 5

Match the definition with the right formula

Definition: In a right angled triangle the square of the long side is equal to the sum of the squares of the other two sides.

A $a^2 + 2b = 2c^2$ B $2ab+2bc=2ac$ C $a^2 + b^2 = c^2$ D $2ab = 2c$

What theorem is this?

Circle

radius – promień
diameter- średnica
chord – cięciwa
area – pole
circumference – obwód

Exercise 6
Match the formulas with the expressions

L=2πr	diameter
P=πr²	radius
r = ½ d	circumference of a circle
d = 2r	area of a circle

Exercise 7
What is the circumference of a circle with a diameter of 5?

A 25π   B 10π   C 5π   D 25/4π

Exercise 8
What is the area of a circle with a radius of 3?

A 36π   B 3π   C 6π   D 9π

Exercise 9
What is the diameter of a circle with an area of 64π?

A 4   B 16   C 32   D 8

Probability
Exercise 10
There are 5 white balls, 8 red balls, 7 yellow balls and 4 green balls in a container. A ball is chosen at random.

What is the probability of choosing red?
What is the probability of choosing either red or white?
What is the probability of choosing neither white nor green?
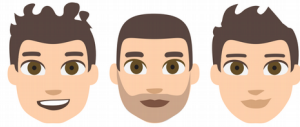What is the probability of choosing a ball other than yellow?
What is the probability of choosing black?

Logic
Exercise 11
Kevin, Joseph, and Nicholas are 3 brothers. If the following statements are all true, which of them is the youngest?

- o   Kevin is the oldest.
- o   Nicholas is not the oldest.
- o   Joseph is not the youngest.

A Kevin   B Nicholas   C Joseph

Exercise 12
You have a basket containing ten apples. You have ten friends, who each desire an apple. You give each of your friends one apple.
Now all your friends have one apple each, yet there is an apple remaining in the basket. How?

Radicals / Roots pierwiastki
The expression $\sqrt{9}$ is read as "root nine", "radical nine", or "the square root of nine"
$\sqrt{64} = 8$ - the square root of 64 is 8

$\sqrt{x} =>$ $\sqrt{}$ is the **radical sign** and *x* is called the **radicand**

A cube (third) root is written as: $\sqrt[3]{}$
$\sqrt[3]{9} = 3$ – the cube root of 9 is 3

Exercise 13
What is the radicand of root four hundred and forty one?
What is the radicand of a cube root of three hundred and forty three?

Exercise 14
Estimating Square Roots
Use your square root estimation skills and choose the right option
$\sqrt{5}$ $\sqrt{42}$
A is between 1 and 2   A is between 6 and 7
B is between 4 and 5   B is between 7 and 8
C is between 2 and 3   C is between 5 and 6

Exercise 15
Ratio and proportion
The ratio boys to girls in my class is 3:4. If there are 12 boys, how many girls are there in my class?
A 10   B 9   C 14   D 16

Exercise 16
How many legs (total) does 4 dogs, 2 elephants, 15 cats, and 26 people have?
    A. 98   B. 110

C. 136

D. 142

Exercise 17
Joe counts 48 heads and 134 legs among the chickens and dogs on his farm. How many dogs and how many chickens does he have?

Exercise 18
You walk into a room and see a bed. On the bed there are two dogs, four cats, a giraffe, a cow and three ducks. There are also four chickens flying above the bed. How many legs are there on the floor?

A 38   B 6   C 46   D 4

Exercise 18
I travel a lot and meet both the rich and the poor, but nobody knows where I am going next. I'm invisible but you can see what I do. Who or what am I?

Exercise 19
A French tourist was driving in the USA when he noticed a signpost that said: Denver 125 miles. If 5 miles is equivalent to 8 km, how far away from Denver is this in kilometres?

1 mile=1,609344 km (1,61)

A.   320 kilometres
B.   201 kilometres
C.   152 kilometres
D.   12,5 kilometres

Exercise 20
Mario has just arrived in the UK from Italy. Today he is shopping in the market, but he is extremely confused: at the greengrocer's all the weights are in pounds (lb). Fortunately, the greengrocer can convert pounds weight to kilos. In the end, Mario bought 6 lb of potatoes, 2 lb of apples and 1 lb of bananas. If 1 kg is equivalent to 2,2 lb, what is the total weight of the groceries?
A.   26,4 kg
B.   7 kg
C.   5,5 kg
D.   1,2 kg

Exercise 21
Farmer Giles likes to think of himself as a modern farmer. He says that his farm occupies an area of 1 011 750 m2 (one million eleven thousand seven hundred and fifty square metres). Farmer Morris is a bit old fashioned and he uses the word 'acre' when he is talking about the size of his farm. He says that his farm, which occupies 250 acres, is larger than farmer Gile's farm. Whose farm is larger?
A.   Farmer Gile's farm
B.   Farmer Morris's farm
C.   Can't say because the units of area are different
D.   They are both the same size.

One acre is equivalent to an area of 4 047 m2.