BLOOMSM4TH

Makes Maths Fun

Level 5

LENGTH

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 5

Length

Level 5 is designed for students in their fifth year at school often called Year 4. Students will estimate, measure, compare and record lengths, distances and perimeters in metres, centimetres and millimetres.

Knowledge: Students will convert between millimetres, centimetres and metres.

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 estimate and then measure the furthest distance they can cover in one jump in a long jump.

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 will convert their jumps from centimetres to metres and compare this to the current World Record.

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 solve "Pole-Vault" problems.

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 solve stride related length questions.

Evaluation: Suggested questions provide a starting point for discussions related to Length.

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

Match each pair of distances to find out - **Why you would take a ruler to bed with you?**

1	3.5m	•	•	1.5cm (S)
2	120cm	•	•	4.3cm (E)
3	15mm	•	•	3800mm (N)
4	13m	•	•	4.79m (P)
5	4030mm	•	•	1.2m (O)
6	29m	•	•	2900cm (H)
7	2840mm	•	•	4cm (U)
8	1.4m	•	•	6.31m (O)
9	0.75m	•	•	350cm (T)
10	6310mm	•	•	93mm (O)
11	380cm	•	•	13000mm (E)
12	190mm	•	•	630cm (T)
13	7.2cm	•	•	75cm (L)
14	9.3cm	•	•	72mm (Y)
15	40mm	•	•	2.84m (O)
16	520mm	•	•	2810mm (E)
17	48m	•	•	19cm (G)
18	281cm	•	•	5.2m (S)
19	4790mm	•	•	1400mm (W)
20	6.3m	•	•	4800cm (L)

1	2	3	4	5	6	7	8	9	10	11	12

13	14	15	16	17	18	19	20

Let's Try This Again

Progress To Comprehension

LN 5 KN

Length - Level 5 - Students will estimate, measure, compare and record lengths in ms, cms and mms.

Knowledge
Comprehension
Application
Analysis
Synthesis
Evaluation

BLOOMSMATH

Name: _____

Comprehension

Estimate how far you can jump in a single jump in long jump: _____cms

On the table below record the results for you and 9 of your classmates.

Student's Name	Distance jumped in centimetres
You:	

Which student jumped the furthest?

Which student jumped least far?

How much farther did you jump than the student who jumped least far?

How much farther did the furthest student jump than you?

How far did all 10 of you jump together?

Name: _____

Application

The longest jumping distance was last set in 1991 by Mike Powell who jumped an incredible 8.95metres. Compare your distances to Mike Powell's to see how much further you needed to go.

Student's Name	Distance jumped in centimetres	Distance jumped in metres	Distance less than the World Record
You:			

How many of your jumps you would need to make to equal Mike Powell's jump length?

Name: _____

Analysis

At the last Olympic Games a disaster struck when a pole-vaulter's 3.5metre pole snapped in two. The break left one piece $\frac{1}{4}$ the length of the remaining pole. How long was each piece of pole? Use the space below to help you work this out.

Piece 1

Piece 2

Pole vaulters actually use 4 or 5 different poles because each pole needs to be no longer than 1 foot or 30.5cms taller than the bar they are trying to jump. As the bar rises they increase their pole length. See if you can find the optimum pole length for each bar height below up to the world record height of 6.18 metres set by 15 year old Armand Duplantis in 2020. See if you can find something comparable to each height around the classroom or your school.

Bar Height	Pole height	Comparable Height Item
1.4m		
2.5m		
3.2m		
4.3m		
4.9m		
5.7m		
6.2m		

Let's Try This Again

Progress To Synthesis

Name: _____

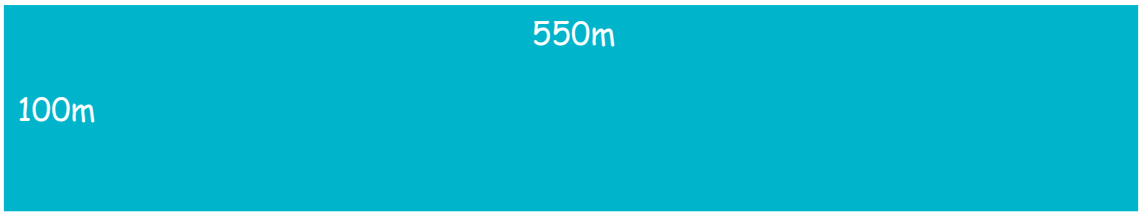
Synthesis

See if you can answer the questions below about 2 girls who are friends.

One girl has a 12cm stride and she walks 5 steps per 30 seconds. Her friend who is shorter has a 6cm stride but she can run at 9 strides in 30 second.

a. Which girl will travel 50 metres first? Use the space below to help you.

b. Which girl would travel the perimeter of the school first if the school is 100m x 550m but the girl who is walking does not need to stop while the girl who is running needs to stop for 10 seconds every 100m to drink some water?



Evaluation

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

How many jumps did most students need to make to reach Mike Powell's 8.95m record?

Measure out 8.95 metres to show students the current long jump record.

Show students how high 6.2 metres is and let them try to jump this as a long jump length.

Ask students to measure their stride length and see how far they walk in 1 minute.

Have them estimate and then measure how many steps they actually take to travel 50m.

Ask students to show how they compared the 2 girls stride lengths for Synthesis part B.