

# Turtle Math Worksheets

Grade 6 – Mathematics



## Lesson Details

<b>Grade Level:</b>	6	<b>Curriculum Links:</b>	Mathematics	<b>Time Needed:</b>	40 minutes – 1 hour
<b>Learning Goal</b>	To gain practice and confidence in math, as well as explore applications related to the real world.				
<b>Success Criteria</b>	By the end of this lesson, students will have successfully completed the worksheet.				
<b>Specific Expectations</b>	<p><i>Quantity Relationships</i></p> <ul style="list-style-type: none"> <li>• Represent, compare, and order fractional amounts with unlike denominators, including proper and improper fractions and mixed numbers, using a variety of tools and using standard fractional notation;</li> <li>• Solve problems that arise from real-life situations and that relate to the magnitude of whole numbers up to 1,000,000;</li> <li>• Estimate quantities using benchmarks of 10%, 25%, 50%, 75%, and 100%.</li> </ul> <p><i>Operational Sense</i></p> <ul style="list-style-type: none"> <li>• Use a variety of mental strategies to solve addition, subtraction, multiplication, and division problems involving whole numbers;</li> <li>• Solve problems involving the multiplication and division of whole numbers, using a variety of tools and strategies;</li> <li>• Add and subtract decimal numbers to thousandths, using concrete materials, estimation, algorithms, and calculators;</li> <li>• Multiply and divide decimal numbers to tenths by whole numbers, using concrete materials, estimation, algorithms, and calculators;</li> <li>• Multiply whole numbers by 0.1, 0.01, and 0.001 using mental strategies;</li> <li>• Multiply and divide decimal numbers by 10, 100, 1000, 10,000 using mental strategies.</li> </ul> <p><i>Proportional Relationships</i></p> <ul style="list-style-type: none"> <li>• Represent ratios found in real-life contexts, using concrete materials, drawings, and standard fractional notation.</li> </ul> <p><i>Measurement Relationships</i></p> <ul style="list-style-type: none"> <li>• Select and justify the appropriate metric unit to measure length or distance in a given real-life situation;</li> <li>• Solve problems requiring conversion from larger to smaller metric units.</li> </ul> <p><i>Data Relationships</i></p> <ul style="list-style-type: none"> <li>• Demonstrate an understanding of mean, and use the mean to compare two sets of related data, with and without the use of technology;</li> <li>• Demonstrate an understanding of mean, and use the mean to compare two sets of related data, with and without the use of technology.</li> </ul>				
<b>Materials Needed</b>	Worksheet (attached), Pencil, Calculator (optional).				

## Lesson Description

<b>Overview</b>	Students will complete fun math problems, related to turtles, in the attached worksheet.
<b>Activity</b>	<ol style="list-style-type: none"> <li>1. Hand out the worksheet to the students.</li> <li>2. Optional: Students can work independently or in small groups.</li> </ol>

## Lesson Description

	3. Optional: As a class, take up the worksheet.
<b>Blacklist Masters</b>	<ul style="list-style-type: none"><li>• Worksheet (attached)</li><li>• For more information, please visit <a href="https://www.turtleguardians.com/">https://www.turtleguardians.com/</a></li></ul>
<b>Place-Based Learning</b>	Students can relate what they have learned about turtles to their local wildlife.
<b>Inquiry-Based Learning</b>	Using <b>Structured Inquiry</b> , students will complete the worksheet.  Ask the students: <ul style="list-style-type: none"><li>• What are the 8 different species of Ontario Turtles? What are their characteristics?</li><li>• Why is incubating turtle eggs important for turtle conservation?</li><li>• Why are wetlands important? Why are shorelines important?</li></ul>
<b>Turtle Stories</b>	Try your hand at making new math problems for others to solve. Students are encouraged to share what they have learned and any new problems created on the Turtle Stories website, found here: <a href="https://www.turtlestories.ca/">https://www.turtlestories.ca/</a>
<b>Turtle Guardian Program Links</b>	In <b>Level 1</b> (Ontario Turtle Identification) of the <b>Turtle Guardian Program</b> , students will learn how to identify all 8 species of Ontario's turtles, information about their habitats and how to help them. For more information, please visit <a href="https://www.turtleguardians.com/what-is-a-turtle-guardian/">https://www.turtleguardians.com/what-is-a-turtle-guardian/</a>

## My Notes



# Turtle Math Worksheet



A Blanding's Turtle laid 12 eggs in a nest it had dug after being helped across the road by a student. Of these 12 eggs, one quarter survived to become adults, three quarters were eaten by predators as small baby turtles; of the survivors one third were males, two thirds were females. Turn the fractions into whole numbers.

A. How many eggs survived?

**3 eggs**

How many eggs were eaten?

**9 eggs**

B. How many were male?

**1 male**

How many were female?

**2 females**



Megan was researching Spotted Turtles and found three nests. The second nest had twice as many eggs as the first one, and half as many as the third nest. The second nest had 6 eggs.

A. How many eggs were in each nest?

**Nest 1 = 3 eggs    Nest 2 = 6 eggs    Nest 3 = 12 eggs**



Steve saw a Blanding's turtle out basking on a 5-metre-long log. They knew it was a Blanding's turtle because of the bright yellow chin. They also took a picture of the Blanding's turtle. In the picture the turtle's shell was 0.1 m tall (from the log to the top of the army helmet shaped shell) and the log was 5 cm in height.

A. How tall is the Blanding's turtle shell in cm?

**10 cm**



Sarah studied Stinkpot turtles. These small turtles get their common name from a musk-like smell they produce when they are frightened or nervous. These turtles live in lakes in some parts of southern Ontario and are a Threatened Species. After a period of incubation within the mother turtle, approximately 3-5 eggs will be laid in a nest. Sarah found 13 nests in her study area with the following number of eggs in each nest: 3, 3, 4, 6, 1, 2, 4, 5, 3, 3, 4, 5 and 5.

A. What is the mean number of eggs in each nest? What is the median and mode?

**Mean = 3.69      Median = 4      Mode = 3**

B. How would the mean, median and mode change if all the turtles that laid 3 eggs instead laid 4 eggs?

**Mean, Median and Mode = 4**



Three Painted Turtles laid nests near a road, which were later incubated by The Land Between. This kept the eggs safe, so that they weren't eaten by predators. After 60 days, the baby turtles hatched and were released into the wild. Sadly, not many baby turtles make it to adulthood. Out of the first nest,  $\frac{3}{8}$  survived. In the second nest,  $\frac{1}{4}$  survived. In the third nest,  $\frac{5}{12}$  survived.

A. Find a common denominator for all the fractions.

**24**

B. Order the fractions from smallest to largest.

**$\frac{1}{4}$  ( $\frac{6}{24}$ ),  $\frac{3}{8}$  ( $\frac{9}{24}$ ),  $\frac{5}{12}$  ( $\frac{10}{24}$ )**

C. Which nests had the most turtles survive to adulthood. Write your answer in a sentence.

**Therefore, the nest that had the most turtles survive to adulthood was the third nest.**



Sam went to a wetland to look for turtles. She saw 35 turtles in total.

A. If 50% of the turtles she saw were Painted Turtles, estimate how many Painted Turtles Emma saw.

**17.5 (or rounded to 18)**

B. If 25% of the turtles Sam saw were Northern Map Turtles, estimate how many Map Turtles she saw.

**8.75 (or rounded to 9)**

C. If 10% of the turtles Sam saw were Common Snapping Turtles, estimate how many Snapping Turtles Emma saw.

**3.5 (or rounded to 4)**



We know that wetlands are important because it is where turtles and other animals live! That is why we need to protect wetlands. There are 200 wetlands in a township.

A. 23 of the wetlands are currently protected from development. If it is decided that 3 times that many wetlands will be protected in the coming year. How many wetlands will be protected?

**69**

B. How many wetlands are left unprotected?

**131**

C. You now know how many wetlands are not protected. To learn about how important these wetlands are, Turtle Guardians go and survey the wetlands. If there are 15 people and they survey equal amounts of wetland, how many wetlands does each Turtle Guardian survey? Round to the nearest whole number.

**8.7**

**Rounded = 9**





Shorelines are an important habitat for many animals, including turtles. Turtles use shorelines as places to warm up in the sun and to lay their eggs. A person bought a house beside a lake. There was 25.4682 metres of shoreline. The person decided to build a boathouse on the shoreline that was 7.2483 metres wide.

A. How much shoreline habitat was lost? Keep all the decimal places.

**18.2199 m**

B. Give your answer in centimetres.

**1821.99 cm**



A Common Snapping Turtle lays 60 eggs in the wild. Unfortunately, very few eggs survive to adulthood.

A. If 1% of the eggs survived to adulthood, how many became adult turtles? (HINT: 1% is 0.001).

**0.6 eggs**

B. Round your answer to the nearest whole turtle.

**1 egg**





# Turtle Math Worksheet



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A. How many eggs survived?

How many eggs were eaten?

B. How many were male?

How many were female?



Megan was researching Spotted Turtles and found three nests. The second nest had twice as many eggs as the first one, and half as many as the third nest. The second nest had 6 eggs.

A. How many eggs were in each nest?



Steve saw a Blanding's turtle out basking on a 5-metre-long log. They knew it was a Blanding's turtle because of the bright yellow chin. They also took a picture of the Blanding's turtle. In the picture the turtle's shell was 0.1 m tall (from the log to the top of the army helmet shaped shell) and the log was 5 cm in height.

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- A. What is the mean number of eggs in each nest? What is the median and mode?
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Three Painted Turtles laid nests near a road, which were later incubated by The Land Between. This kept the eggs safe, so that they weren't eaten by predators. After 60 days, the baby turtles hatched and were released into the wild. Sadly, not many baby turtles make it to adulthood. Out of the first nest,  $\frac{3}{8}$  survived. In the second nest,  $\frac{1}{4}$  survived. In the third nest,  $\frac{5}{12}$  survived.

- A. Find a common denominator for all the fractions.
- B. Order the fractions from smallest to largest.
- C. Which nests had the most turtles survive to adulthood. Write your answer in a sentence.
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**Sam went to a wetland to look for turtles. She saw 35 turtles in total.**

- A. If 50% of the turtles she saw were Painted Turtles, estimate how many Painted Turtles Emma saw.
- B. If 25% of the turtles Sam saw were Northern Map Turtles, estimate how many Map Turtles she saw.
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**We know that wetlands are important because it is where turtles and other animals live! That is why we need to protect wetlands. There are 200 wetlands in a township.**

- A. 23 of the wetlands are currently protected from development. If it is decided that 3 times that many wetlands will be protected in the coming year. How many wetlands will be protected?
- B. How many wetlands are left unprotected?
- C. You now know how many wetlands are not protected. To learn about how important these wetlands are, Turtle Guardians go and survey the wetlands. If there are 15 people and they survey equal amounts of wetland, how many wetlands does each Turtle Guardian survey? Round to the nearest whole number.

**Rounded = \_\_\_\_\_**

8

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A. How much shoreline habitat was lost? Keep all the decimal places.

B. Give your answer in centimetres.

9

A Common Snapping Turtle lays 60 eggs in the wild. Unfortunately, very few eggs survive to adulthood.

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B. Round your answer to the nearest whole turtle.

