Chapter 1   Square Roots and Pythagorean Theorem   1.1 Square Numbers and Area

In Lil'wat (Mount Currie), three families share a square garden area of 900m².
They work together to build a fence around the garden to protect their potato crop from the wildlife.
    a) Find the length and width of the sides.
How much fencing is needed to go around the perimeter of the garden?

Chapter 1   Square Roots and Pythagorean Theorem   1.2 Square and Square Roots

KiKa7 has 36 equal squares of material. If **KiKa7**wants to make a square quit that has equal sides, how many little squares are on each side?

Chapter 1   Square Roots and Pythagorean Theorem   1.3 Measuring Line Segments

This local hut is made of woven bulrushes and is used as a temporary shelter found in the Hat Creek area.
It measures about 2.7 m high and 2.1 m at the base from side to side. How long are the sides from top to bottom?

Chapter 1   Square Roots and Pythagorean Theorem   1.4 Estimating Square Roots

The traditional Stl'atl'imx territory is about 28,000 km².
If this shape were to be redrawn as a perfect square what would be the length of the sides of the new area?

Chapter 1   Square Roots and Pythagorean Theorem   1.5 Pythagorean Theorem

A necklace is made with a strip of leather and beads spaced out at regular spots along the leather. What is the smallest number of beads that can be used so that the necklace can form a right angle triangle? Hint: Use a Pythagorean triple.

Chapter 1   Square Roots and Pythagorean Theorem 1.6 Exploring the Pythagorean Theorem

Tee-IM-ti-k'm, chief at **Ts'kw'aylacw** (Pavilion) uses a food storage cache for winter storage of his sockeye salmon. He needs to rebuild the old roof for next season. Use Pythagorean Theorem to determine the length of the boards needed to complete the roof. The height of the roof is 165 cm and the base of the roof measures 360 cm across.

Chapter 1   Square Roots and Pythagorean Theorem 1.7 Applying the Pythagorean Theorem

The ladder in a **s7istken** (pit house) extends .5 meters past the opening in the roof. The log ladder is 2.8 m long and is 1 m off centre from the opening. How deep is the pit house?

Chapter 2   Integers   2.1 Using Models to Multiply Integers

Bill Reid of Haida descent is a world famous artist. His sculptures are everywhere. He has one at the Vancouver Airport and you should check out a $20 bill. What if someone collected $20 each day for 21 days? Using a model of your choice, show how much money they would have.
What if they gave away $20 for 21 days? Using a model of your choice, show how much money they would not have

Chapter 2   Integers   2.2 Developing Rules to Multiply Integers

The **T'it'q'et** (Lillooet) Elders plan to share skill of intricately woven cedar root basketry with the children of their community. To hold the workshop, the band office withdrew $15 from their bank account for each of the 65 students who planned to learn this new skill. Use integers to find the total amount withdrawn.

Chapter 2   Integers   2.3 Using Models to Divide Integers

Gino Odjick who grew up in an Algonquin Native Reserve named Chum Sa Bay played for the Vancouver Canucks between 1991-1998. The length of the ice surface is 200 feet. If he skates backwards the length of the ice in 5 seconds how far will he travel each second?
Show the equation using integers.

Chapter 2   Integers   2.4 Developing Rules to Divide Integers
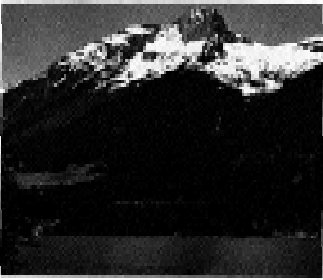
Many years ago a man named **Kush-Tee** was travelling on Lillooet Lake in the rain. The water rose so high he had to anchor his canoe to the peak of **In-SHUK-eh** Mountain. The rain stopped and for 6 hours the water receded identical amounts until he was 102 m down the mountain. What was the depth of each hourly drop in water level?

Chapter 2   Integers   2.5 Order of Operations with Integers

In **Tsal'álh** (Seton Lake), the Chief was planning to travel down to the lower end of Seton Lake to pick **tsáqwem** (Saskatoon berries) for winter canning. To plan for his trip he recorded the daily temperature for one week. They were -4^0C, $+3^0$C, -6^0C, -2^0C, -13^0C, -8^0C, $+1^0$C. Find the mean (average) temperature.

Chapter 3   Operations with Fractions 3.1 Using Models to Multiply Fractions and Whole Numbers
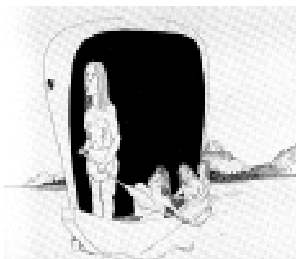
KA-ti-ka and his people paddled their canoe around Anderson Lake searching for **gwen'is** (floaters , a type of Kokanee). Each member paddled for 3/8 of an hour and there were 24 people in the canoes. How long did they search for floaters?

Chapter 3   Operations with Fractions 3.2 Using Models to Multiply Fractions

The **Kúkwpi7** (Chief) from Little **T'skw'aylacw** (Pavilion) decided to share 3/8 of 1/4 of his arrowheads with his two sons. What fraction of arrowheads did he share?

Chapter 3   Operations with Fractions   3.3 Multiplying Fractions

In the fall, one third of the **Xaxl'ip** (Fountain) Band members shot a deer while hunting. The noticed that 3/5 of all the deer were missing an antler. What fraction of the deer had one antler?

Chapter 3   Operations with Fractions   3.4 Multiply Mixed Numbers

In July, **St'át'imc** (Mount Currie) members prepare salmon for wind-drying 2 ¾ hours per day. In August this daily preparation increases to 2 1/3 times the July amount. How many hours per day in August do they prepare Salmon?

Chapter 3   Operations with Fractions   3.5 Dividing Whole Numbers and Fractions

At **Sekw'el'was** (Cayoosh Creek) Reserve, the doctor made a head-dress from skvl (buckskin) to protect a sick person. To do this he needed to find how many ¼ size pieces of leather could be cut from 5 hides. What is the amount?

Chapter 3   Operations with Fractions   3.6 Dividing Fractions

The young men near **S7istken** (Cayoosh Creek) can build a pit house in 2/5 of a month. How many pit houses could they build in 7/12 months?

Chapter 3   Operations with Fractions   3.7 Dividing Mixed Numbers

At Lillooet Lake, Cora can cut and prepare 3 1/3 salmon in 11 2/3 minutes. If each salmon took the same amount of time to prepare, how long did Cora take to cut one salmon?

Chapter 3   Operations with Fractions   3.8 Solving Problems with Fractions

Five people are gathering **tsáqwem** (Saskatoon berries) by Pavilion Lake. At the end of the day they have 58 kg of berries. Three people picked 2/3 of the berries, one person picked ¼ of the berries. What fraction did the last person pick?

Chapter 3   Operations with Fractions   3.9 Order of Operations with Fractions

Why do we have "skill testing questions" in Canada? Well the reason is that long time ago it was decided that people could not be given free stuff from a contest unless they "earned" it by showing they deserved it….so… in most cases they had to answer a math question. Here is the problem. What are the answers for these questions?

5 + 20 X 2 – 36 ÷ 9   (5 + 20) X 2 – 36 ÷ 9   5 + 20 X (2 – 36) ÷ 9
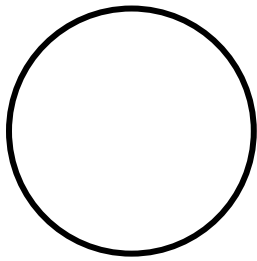
Chapter 4   Measuring Prisms and Cylinders   4.1 Exploring Nets

Draw the net for a **silht'sa7úl** (moccasin). What do the pieces look like before joined to make footwear?

What will the following views create when put together? Draw the object.

Top

Front

Back

Right Side

This box measures 17 cm long by 12 cm wide by 5 cm tall. How much wood (cm ^{2}) is needed (surface area) to make it?

A shelter for a **cwikemálhcw** (fish drying rack) measures 2.5 m high by 4 m long by 3 m deep. How much tarp (m^2) is needed to cover the shelter. You need to cover all surfaces including the base. Note: the shelter has an equilateral triangle on the sides.

This **xétsem** (box) measures 17 cm long by 12 cm wide by 5 cm tall. How much (volume) in cm^3 can this box hold?

Chapter 4   Measuring Prisms and Cylinders   4.6 Volume of a Right Triangular Prism

A shelter for a **cwikemálhcw** (fish drying rack) measures 2.5 m high by 4 m long by 3 m deep. What is the volume of this shelter in m³?
Note: the shelter has an equilateral triangle on the sides.

Chapter 4   Measuring Prisms and Cylinders   4.7 Surface Area of a Right Cylinder

A **púmaka7** (hand drum) is 30 cm in diameter and 7 cm wide. How much deer hide is needed to cover it. Remember that one side of the drum is open. Use cm².

Chapter 4   Measuring Prisms and Cylinders   4.8 Volume of a Right Cylinder

A typical **s7istken** (pit house) measures 2.5 m high. The radius of the building is 10 m. How much **tmicw** (earth) (m³) must be excavated before construction can begin?

Chapter 5   Percents, Ration and Rate   5.1 Relating Fractions, Decimals and Percents

A **t'súqwaz** (fish) weighs 12 kg when caught. After cleaning to dry it, it loses 4kg of its mass. How much meat remains? Show your answer as a fraction, a decimal and as a percent.

Chapter 5   Percents, Ration and Rate   5.2 Calculating Percents

The written **St'at'imc** language uses 48 characters. The English language uses 26. What percent does the English language use compared to the Stl'atl'imx language?

A hoop dancer has a total of 14 hoops. Six of them are on his arms. What percent remain on the rest of his body?

In the traditional Aboriginal Canadian version of lacrosse, each team consisted of about 100 to 1,000 men on a field that stretched from about 500 yards to a couple of miles long. These lacrosse games lasted from sunup to sundown for two to three days straight. These games were played as part of ceremonial ritual to give thanks to the Creator.
At one store a lacrosse stick sells for $45.99 plus HST (12%). Another store sells the same stick for $63.99, no HST and offers a 25% discount.
Which store has the better price?

A dip net measures 2.5 m long. The net part only measures 0.5m . What is the ratio of the head to the whole net? (part to whole)
What is the ration of the head to the pole? (part to part)

A trail mix uses 10 grams of berries, 3 grams of powdered salmon and 7 grams of pine nuts. Make a double, triple batch of the mix. Make one other larger batch for longer trips.

Which mix is stronger? 2 cans of concentrate with 3 cans on water or 3 cans of concentrate with 4 cans of water. Solve the problem in 2 different ways.

Chapter 5   Percents, Ration and Rate   5.8 Solving Ratios Problems

Xusumátgwa7 (Soapberry juice) is made with 1 part berry juice to 3 parts water and 2 parts sugar. What are the new quantities if you quadruple the recipe?

Chapter 5   Percents, Ration and Rate   5.9 Exploring Rates

A7ma is learning to speak Stl'atl'imx at Lillooet Secondary School. She has learned 363 words in 96 classes. What is the rate in words per class?

Chapter 5   Percents, Ration and Rate   5.10 Comparing Rates

In 3 hours of fishing Apa7 catches 23 chinook salmon and in 7 hours of fishing Apa7catches 52 spring salmon. Who has the better rate of catching fish? What would that person catch in 20 hours of fishing at that rate?

Chapter 6   Linear Equations and Graphing   6.1 Solving Equations Using Models

Use a balance scale or another picture to show the following problem. An elder has picked 3 containers of **skwenkwin** (wild potatoes). She has a total of 39 **skwenkwin** . How many **skwenkwin** are in each container is they all have the same amount? Solve the problem.

Chapter 6   Linear Equations and Graphing   6.2 Solving Equations Using Algebra

An elder starts the day with 4 kg of **tsáqwem** (Saskatoon berries). After 5 days of picking, she has a total of 49 kg. If she picked the same amount of berries every day how much did she pick each day?

Chapter 6   Linear Equations and Graphing   6.3 Solving Equations Using Fractions

At a potlatch gifts were given out to the four people who organized the event. Each received 3 gifts. How many gifts were given in total? Solve the problem using algebra.

The word **pow wow** comes from the Algonquin word **pau wau,** which was used to describe medicine man and spiritual leaders. Today it means a gathering of many people to share and celebrate.
One way to earn the tile of Princess at the pow wow is to sell tickets. In one day a young girl sells 23 tickets and another girl sells 34 tickets. If this pattern is repeated for 5 days, how many tickets in total are sold?
Solve the problem in 2 different ways.

Chapter 6   Linear Equations and Graphing   6.5 Solving Equations Involving the Distributive Property

These edible stalks are called **hakwa7** (cow parsnip). One basket contains 56 and the other has 88. If you were to pick for several days and duplicate both baskets how many stalks would you have if you had 7 baskets of each? Solve the problem two different ways.

Chapter 6   Linear Equations and Graphing   6.6 Creating a Table of Values

This cooking tool platter is made from red willow branches and leaves from a thimbleberry shrub. It is used for pit cooking.
Each one uses about 23 leaves. Fill in the table of values below.

Cooking Tool	# of leaves
1	
2	
3	
10	
50	
77	

Chapter 6   Linear Equations and Graphing   6.7 Graphing Linear Relations

Using the data from the previous section, graph the table of values and also find the equation to describe the table of values. Based on your graph, how many tools can you make with 100 leaves, 450 leaves?

Section of Fraser River	Percent of fish found
Mouth of Fraser River	100%
Near Pitt River	99%
Near Chilliwack River	98%
Near Harrison River	72%
Above Hope	71%
Near Thompson River	41%
Near Bridge River	40%

Choose an appropriate graph for the data on the left.

Section of Fraser River	Weight of fish (kg x 1000)
Mouth of Fraser River	251,000
Near Pitt River	239,825
Near Chilliwack River	237,360
Near Harrison River	215,233
Above Hope	201,055
Near Thompson River	78,668
Near Bridge River	69,194

Show in graph form how you could misrepresent the data on the left.

A bear eats one **ts'wan** (dried fish)from two different drying racks. The first camp has 120 fish and the second one has 100 fish.
The first has 30 larger fish and the second has 40 larger fish. What is the probability that the bear eats a large fish from both sites?
What is the probability that the bear eats a large fish from the first site and then a small fish from the second site?

A painting has four colours; black, white, yellow and red. Starting on the top right side and continuing clockwise, what is the probability of getting all the colours in the proper location?
What do the four colours represent? Why is the number 4 so important in First Nations culture?

Chapter 8   Geometry   8.1 Sketching Views of Objects

> Draw the front, top, and right hand views of this **tsepalin** (baby basket).

Chapter 8   Geometry   8.2 Drawing Views of Rotated Objects

> Draw two new views of this drum as it stands up.
> First rotate the drum horizontally and then redraw.
> Next rotate the drum vertically and then redraw.

Chapter 8   Geometry   8.3 Building Objects from their Views

> Question here…..

Chapter 8   Geometry   8.4 Identifying Transformations

> The **pátsa7** deer antler in this picture is often used by First Nations people to dig up roots.
> Redraw the **pátsa7** to show the new view when you translated up and right, reflect on the y-axis and rotate 90^0 clockwise.
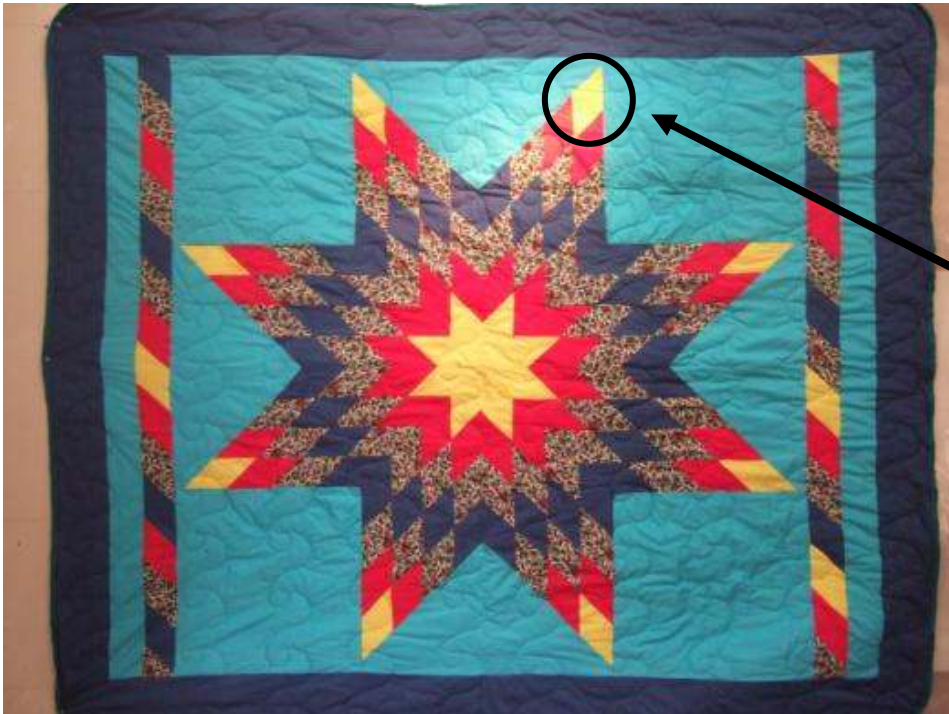
Is it possible to have this arrowhead tessellating?
If not, how could you redraw the arrowhead so it still look like an arrowhead and will tessellate.

Identify all the tessellations found in this quilt. Start with the figure that is in the circle.