

Session 5B

Complete Daily Review and Quick Teach 5B

Complete 5B – Fluency Practice

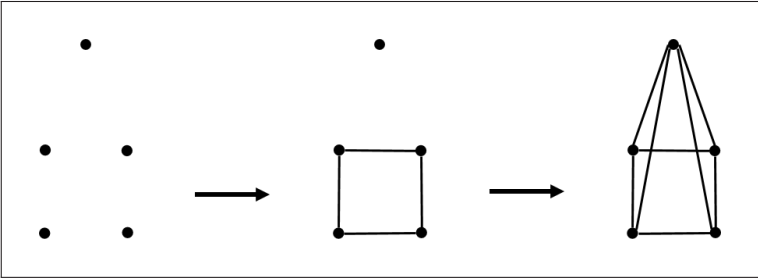
Teach Lesson 5B – Draw and Analyse Pyramids

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Lesson Resources	
Teacher Resources	Resources per Student
Mini whiteboard Visualiser Workbook – 5B	Mini whiteboard Workbook – 5B

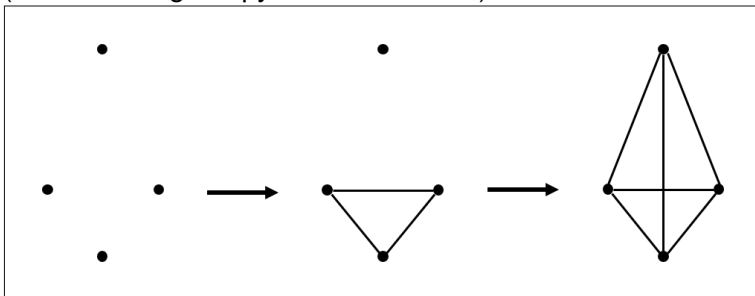
Section A – Review of Pyramids

Teacher Resources - Section A	Resources per Student - Section A
Mini whiteboard Visualiser	(None)

Step	Instruction
1.	(Note: Place a writable surface like a mini whiteboard under the visualiser. Alternatively, the modelling for this lesson can be done on a large classroom whiteboard.)
2.	Today, we are learning more about 3D objects . What are we learning more about?~ Watch as I draw a 3D object now.
3.	(Use the three steps below to draw a square pyramid) 
4.	This is a pyramid . What is it?~ Today's lesson is all about pyramids. Let's review what we know about pyramids.
5.	Pyramids are a type of 3D object. (Point to square base) They have a base, (Point to triangular faces) and triangular faces, (Point to apex) that meet at an apex.
6.	Pyramids are built from flat surfaces. We call the flat surfaces that make a pyramid faces . What do we call them?~
7.	(Point to square base) The base is the face that gives a pyramid its name. What shape is the base?~ Square The base is a square, so this is a square pyramid . What is it?~
8.	(Point to triangular faces) What shape are these faces?~ Triangles That's right. On a pyramid, the faces connected to the base are always triangles. On a pyramid, every face other than the base must be a triangle. (Point to square base) The base of a pyramid can also be a triangle, but it can be other shapes as well. (Point to apex) The triangular faces meet at the apex . Where do they meet?~

9. We have a rule for counting the faces on a pyramid.
We take the number of sides in the base and add 1.
How many sides does the base have?~ **4**
What is 4 plus 1?~ **5**
So how many faces does the square pyramid have?~ **5**
10. That's right. A square pyramid has 5 faces.
(Point to triangular faces) The base has 4 sides, so there are 4 triangular faces,
(Point to square base) plus 1 for the base.
4 plus 1 equals 5, so there are 5 faces on a square pyramid.

11. (Wipe pyramid)
Watch as I draw a different pyramid.
(Draw a triangular pyramid as follows)



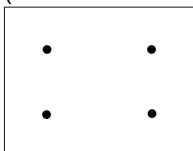
12. What shape is the base?~ **Triangle**
The base is a triangle, so this is **a triangular pyramid**. What is it?~
13. Count the sides on the base of this pyramid and keep the answer in your head.
Take the number of sides on the base and add 1.
How many faces does the triangular pyramid have?~ **4**
14. That's right. A triangular pyramid has 4 faces.
(Point to triangular faces) The base has 3 sides, so there are 3 triangular faces leading to the apex,
(Point to triangular base) plus 1 for the base.
3 plus 1 equals 4, so there are 4 faces on a triangular pyramid.
15. You know how to count the faces of a pyramid using models like this.
Now I'm going to teach you to **draw** pyramids.
Drawing pyramids helps to understand their features.

Section B – Drawing Pyramids

Teacher Resources - Section B	Resources per Student - Section B
As above	As above

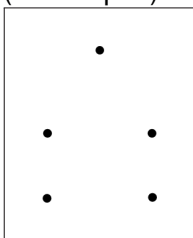
Step Instruction

1. (Wipe board)
We are going to draw a **rectangular pyramid**. What will we draw?~
To draw a pyramid, we draw **dots** first, then lines. What do we draw first?~
2. In a rectangular pyramid, what shape is the base?~ **Rectangle**
That's right. The base of a rectangular pyramid is a rectangle.
3. We draw dots to make a rectangle.
(Draw dots as follows)



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4. Then we draw a dot for the apex.

(Draw apex)



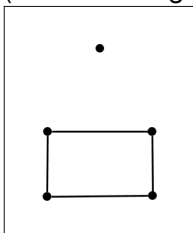
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5. Draw the dots for the rectangular pyramid now. (Check)

6. Eyes up.

We've drawn the dots. What do we draw next?~ **Lines**

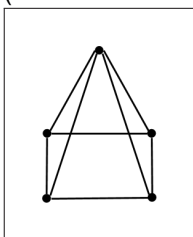
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7. We draw lines to make the rectangular base.

(Draw rectangle)



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8. Then we draw a line from each dot in the base to the apex.

(Draw remaining edges)



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9. When I say go, draw the lines.

Start by drawing the rectangle.

Go. (Support)

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10. 3, 2, 1, **Chin it!**

Boards down.

You just drew dots and lines to make a rectangular pyramid.

Wipe it.

-
11. (Wipe board)

We are going to draw a **triangular pyramid**. What will we draw?~

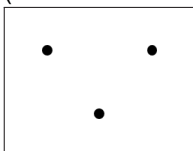
Dots or lines first?~ **Dots**

That's right. Dots first, then lines.

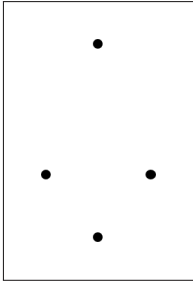
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12. In a triangular pyramid, what shape is the base?~ **Triangle**

So what shape should the dots make?~ **Triangle**

(Draw dots as follows)

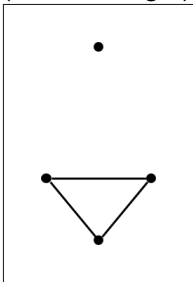


13. Eyes up.
Do we need any more dots?~ **Yes**
That's right. We need a dot for the apex.
(Draw remaining dot)

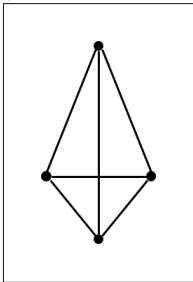


14. Draw the dots for the triangular pyramid now. (Check)

15. Lines next.
Remind me, what shape is the base?~ **Triangle**
(Draw triangle)



16. Do we need any more lines?~ **Yes**
That's right. We need to draw a line from each dot of the base to the apex.
(Draw remaining lines)

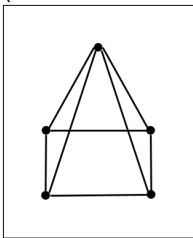


17. Draw the lines to finish the pyramid now. (Support)

18. 3, 2, 1, **Chin it!**
Boards down. Wipe it.

19. When I say go, draw a **rectangular** pyramid.
Start by drawing dots for the base and the apex.
Go. (Support)

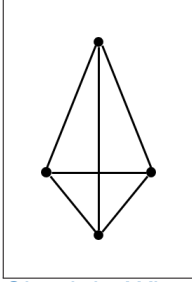
20. 3, 2, 1, **Chin it!**
Boards down.
(Draw a rectangular pyramid)



Check it. Wipe it.

21. Draw a **triangular** pyramid now. (Support)

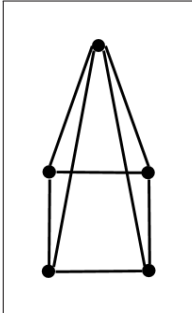
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22. 3, 2, 1, **Chin it!**
Boards down.
(Draw a triangular pyramid)



Check it. Wipe it.

-
23. Draw a **square** pyramid now. (Support)

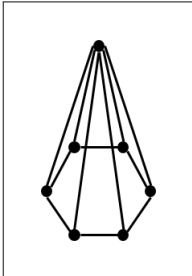
24. 3, 2, 1, **Chin it!**
Boards down.
(Draw a square pyramid)



Check it. Wipe it.

-
25. Draw a **hexagonal** pyramid now. (Support)

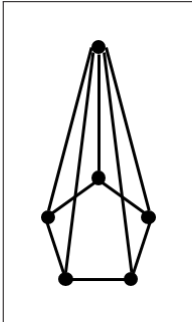
26. 3, 2, 1, **Chin it!**
Boards down.
(Draw a hexagonal pyramid)



Check it. Wipe it.

-
27. Draw a **pentagonal** pyramid now. (Support)

28. 3, 2, 1, **Chin it!**
Boards down.
(Draw a pentagonal pyramid)



Check it. Wipe it.

29. Now that you've had some practice drawing pyramids, I'm going to show you how this can help us count faces, edges, and vertices.

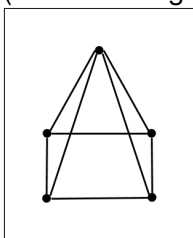
Section C – Analysing Pyramids

Teacher Resources - Section C	Resources per Student - Section C
As above	As above

Step Instruction

1. When I say go, draw a **rectangular** pyramid on the **left** side of your board.
Which side?~ **Left side**
Go. (Support)

2. **Eyes up.**
(Draw rectangular pyramid)



Check it.

3. (To the right of the pyramid, write the following)

faces =

edges =

vertices =

Write these words and equals symbols now. (Check)

4. **Eyes up.**
Count the sides on the base of this pyramid and keep the answer in your head.
Take the number of sides in the base and add 1.
How many faces does the rectangular pyramid have?~ **5**
(Write **5** to complete top problem)
Write it.

5. We can use our drawings of pyramids to count other features.
(Point to “edges”) What does this say?~ **Edges**
The edges on a 3D object are the lines where two faces meet.
(Point to any line) Each **line** on this pyramid is an edge.
Say after me, **the lines are the edges**~

6. Let's count the edges together.
Remind me, are we counting **lines** or dots?~
That's right. The lines are the edges.

-
7. (Point to base) We'll start with the edges around the base.
How many lines did we draw to make the rectangular base? ~ **4**
(Point to apex) We also drew a line from each dot on the base to the apex.
The base has 4 dots, so how many lines did we draw? ~ **4**
There are 4 edges on the base and 4 edges going to the apex.
How many edges altogether? ~ **8**
(Write **8** to complete middle problem)
Write it.
-

8. Eyes up.
(Point to "vertices") What does this say? ~ **Vertices**
The vertices on a 3D object are the corners where two or more edges meet.
(Point to any vertex) Each **dot** on this pyramid is a vertex.
Say after me, **the dots are the vertices**~
-

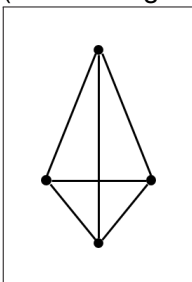
9. Let's count the vertices together.
Remind me, are we counting lines or **dots**?~
That's right. The dots are the vertices.
-

10. (Point to base) We'll start with the vertices in each corner of the base.
How many dots did we draw for the rectangular base? ~ **4**
(Point to apex) How many dots did we draw for the apex? ~ **1**
There are 4 vertices on the base and 1 vertex on the apex.
How many vertices altogether? ~ **5**
(Write **5** to complete bottom problem)
Write it.
-

11. Eyes up.
We just used our drawing of the rectangular pyramid to count its faces, edges, and vertices.
How many faces? ~ **5**
How many edges? ~ **8**
How many vertices? ~ **5**
Notice that the rectangular pyramid has the same number of faces and vertices.
This is true for all pyramids.
Wipe everything except the words and equals symbols.
Keep the words and equals symbols for the rest of the lesson.
-

12. (Wipe pyramid and numbers)
Draw a triangular pyramid now. (Support)
-

13. Eyes up.
(Draw triangular pyramid)



Check it.

14. Count the faces on your pyramid and write the answer next to "faces equals". (Support)
-

15. 3, 2, 1, **Chin it!**
Boards down.
(Write **4** to complete top problem)
A triangular pyramid has 4 faces, so you should have written 4.
Check it, but don't wipe it yet.
-

-
16. Edges next.
Remind me, will you count **lines** or dots?~
That's right. The lines are the edges.
When I say go, count the edges on your pyramid and write the answer.
Count the edges for the base, then the edges going to the apex.
Go. (Support)
-

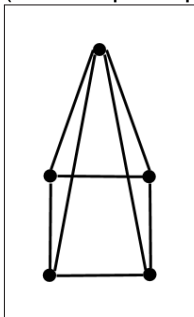
17. 3, 2, 1, **Chin it!**
Boards down.
(Write **6** to complete middle problem)
A triangular pyramid has 6 edges.
3 edges for the base, and 3 edges for the other faces.
Check it, but don't wipe it yet.
-

18. Vertices next.
Remind me, will you count lines or **dots**?~
That's right. The dots are the vertices.
When I say go, count the vertices on your pyramid and write the answer.
Count the vertices for the base, then one extra vertex for the apex.
Go. (Support)
-

19. 3, 2, 1, **Chin it!**
Boards down.
(Write **4** to complete bottom problem)
A triangular pyramid has 4 vertices.
3 around the base, and 1 for the apex.
Check it. Wipe it.
-

20. (Wipe pyramid and numbers)
Draw a square pyramid now. (Support)
-

21. Eyes up.
(Draw square pyramid)



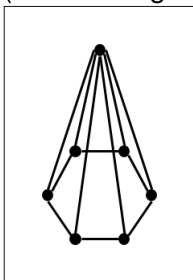
Check it.

22. When I say go, count the faces, edges, and vertices and write your answers.
Remember, the lines are the edges, and the dots are the vertices.
Go. (Support)
-

23. 3, 2, 1, **Chin it!**
Boards down. Look at your work.
How many faces?~ **5**
How many edges?~ **8**
How many vertices?~ **5**
Eyes up.
(Write **5, 8, 5** as answers)
Check it. Wipe it.
-

24. When I say go, draw a **hexagonal** pyramid and count its features. What type of pyramid?~
Go. (Support)
-

25. 3, 2, 1, **Chin it!**
Boards down.
(Draw hexagonal pyramid)

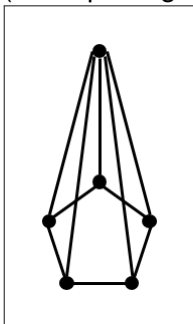


Check that your pyramid looks like mine.

26. How many faces? ~ **7**
How many edges? ~ **12**
How many vertices? ~ **7**
Eyes up.
(Write **7, 12, 7** as answers)
Check it. Wipe it.

27. When I say go, draw a **pentagonal** pyramid and count its features. What type of pyramid? ~
Go. (Support)

28. 3, 2, 1, **Chin it!**
Boards down.
(Draw pentagonal pyramid)



Check that your pyramid looks like mine.

29. How many faces? ~ **6**
How many edges? ~ **10**
How many vertices? ~ **6**
Eyes up.
(Write **6, 10, 6** as answers)
Check it. Wipe it.

Section D – Independent Practice

Teacher Resources - Section D	Resources per Student - Section D
Workbook – 5B Visualiser	Workbook – 5B

Step	Instruction
1.	(Remove whiteboards) (Place Workbook - 5B under visualiser) Open your workbook to 5B. (Check) Each problem has a box to draw a pyramid. Once you draw the pyramid, count the faces, edges, and vertices and write your answers in the boxes.

-
2. Look at Problem A.
What do you need to draw? ~ **Square pyramid**
Solve Problem A now. (Support)

 3. Pencils down.
(Draw a square pyramid for Problem A)
Check your drawing with mine.
(Write **5, 8, 5** for Problem A)
The square pyramid for Problem A has 5 faces, 8 edges, and 5 vertices.
Check it.

 4. Solve the rest of the problems now.
(Support students as they work independently)

 5. (To correct, draw the pyramid indicated by each problem. Have students tick their drawing if it contains the correct features, then correct the answers listed below.)

 6. You just learned to draw pyramids and count their features! Being able to draw pyramids helps to understand how they are made and also helps us answer problems about them. Soon, I will teach you how to draw **prisms**.
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Student Workbook Answers:

Page 1: **A.** 5, 8, 5 **B.** 4, 6, 4 **C.** 5, 8, 5

Page 2: **D.** 7, 12, 7 **E.** 6, 10, 6 **F.** 9, 16, 9

This concludes your maths session for today.