Year 3 Maths No Problem lesson plans Chapter 13, lessons 2 – 8 and chapter consolidation, week beginning 29/06/20

Lesson 2: Identifying Parallel Lines

Textbook pages: 219 – 221

Lesson Objective

To be able to identify parallel lines.

Lesson Approach

To begin this lesson, show pupils the In Focus task and ask them to discuss what they notice about the picture and the lines in the picture. Ask them how they would describe the iron tracks in comparison to the wooden beams. Are the lines perpendicular? What about the two iron tracks, are they perpendicular? What type of lines are they? Tell pupils that parallel lines are lines that do not make an angle; they never meet, no matter how long they are. Let them know that perpendicular lines and parallel lines are special lines because of their unique characteristics. Ask them to identify these lines in the classroom.

Show pupils Let's Learn 2 and how to use arrow heads to indicate when lines are parallel. In Let's Learn 3, ask them if they can prove that the lines PQ and RS are not parallel. Illustrate that when the lines are extended, PQ and RS will eventually meet to form an angle. Show them that even when lines LM and NO are extended, they will never meet. In Let's Learn 4, can they find parallel lines in shapes? How can they mark them?

During Guided Practice, pupils are identifying parallel lines in pictures, shapes and letters.

Lesson 3: Finding Vertical and Horizontal Lines

Textbook pages: 222 – 224

Lesson Objective

To be able to identify horizontal and vertical lines.

Lesson Approach

To begin this lesson, show pupils the In Focus task. Ask them to discuss the question with their partners. Can they apply what they have learnt about special lines to describe the sides of the rectangles? Would it help if they label the lines? Show them how you would label the sides of the picture using A, B, C and D, as shown in Let's Learn 1. Allow them time to come up with descriptions of the lines.

Explain to pupils that there are other ways to describe lines. Tell them that we can also use the term 'vertical' to describe the lines. Vertical lines are perpendicular to the floor. Can you identify the lines in the picture that are perpendicular to the floor? How many of these lines are there? Show them that the sides of the picture, lines AD and BC can be extended to show that they are perpendicular to the floor. What else can we say about these lines?

Guide pupils to see that they are also parallel as they will never meet no matter how long they are extended.

Then ask pupils to describe lines AB and DC. They are parallel to each other. Guide them to see that they are also parallel to the floor. Tell them these lines are called 'horizontal' lines.

During Guided Practice, pupils are identifying horizontal and vertical lines in the classroom and in a picture.

Lesson 4: Describing Two-Dimensional Shapes

Textbook pages: 225 – 227

Lesson Objective

To be able to describe a 2-D shape using angle and side properties.

Lesson Approach

To begin this lesson, provide pupils with a 2-D trapezoid as shown in the In Focus task. Ask them to describe the shape using what they have learnt about angles and lines. Ask them to start with angles. How many are there in the shape? What types of angles are they? How do they know? Can they label all the angles in the shape?

Then ask pupils to describe the sides. How many sides does the shape have? What do we call such a shape? Can we label the sides? What kind of lines do the sides make? Can you mark out the lines? Explain to pupils that we can describe and identify all types of shapes using their angle and side properties as they have just done.

Show pupils Let's Learn 3. Ask each of them to measure the sides of the shape using a ruler. How many centimetres are each of the sides? Guide them to use their rulers to measure accurately.

During Guided Practice, pupils are describing each of the shapes using the familiar vocabulary identified during the In Focus task.

Lesson 5: Drawing Two-Dimensional Shapes

Textbook pages: 228 – 229

Lesson Objective

To be able to draw 2-D shapes.

Lesson Approach

To begin this lesson, provide pupils with 1 cm square grid paper. Show them the In Focus task and ask them which shape is bigger. Tell them your friend can clearly see that the rectangle is bigger. Is this true? How can we be sure? Allow pupils to draw the shapes to scale on their grid paper and compare them. They can cut them out to compare directly. Ask them to think of other ways to compare the shapes. Show them they can also compare by counting the number of squares within each shape.

During Guided Practice, pupils are drawing 2-D shapes to scale using square grid paper and a ruler.

Lesson 6: Making Three-Dimensional Shapes

Textbook pages: 230 – 233

Lesson Objective

To be able to make 3-D shapes.

Lesson Approach

To begin this lesson, provide pupils with enlarged square grid paper. Show them the In Focus task and ask them who is correct. Allow them to discuss this and give the reasons behind their thinking prior to making the shapes. Once they have decided which nets will make which shapes, allow them to construct the shapes to see who is correct.

Show pupils Let's Learn 3 and ask them which net can be folded to make a square-based pyramid. Provide them with a net to make this shape. With the three shapes they have constructed, create a chart with them to discuss the properties of these shapes, i.e. the number of faces, vertices and sides.

During Guided Practice, pupils are naming familiar 3-D shapes and matching shapes presented in different orientations.

Lesson 7: Making Three-Dimensional Shapes

Textbook pages: 234 – 235

Lesson Objective

To be able to make 3-D shapes.

Lesson Approach

To begin this lesson, provide each pupil with some modelling clay. Show them the In Focus task and ask them to make a model of the box. What kind of shape is the box? How many faces does the box have? What is the 2-D shape of each face? Lead pupils to recall that this is a cube. It is made up of 6 identical squares. Guide them to use the properties of a cube to help them make the 3-D shape using clay.

Next, ask pupils to cut the cube in half (or cut the cube to show them). What do they notice? The two parts are identical. Can we change the cube into a sphere? Do you remember what a sphere is? Can you describe it? Then ask them to cut it in half (or cut the sphere to show them). What do you notice about the two sides?

During Guided Practice, pupils are drawing a prism and a pyramid. Allow them to discuss the difference between these two shapes (prisms have identical ends, pyramids form an apex).

Lesson 8: Describing Three-Dimensional Shapes

Textbook pages: 236 – 238

Lesson Objective

To be able to describe 3-D shapes.

Lesson Approach

To begin this lesson, provide pupils with a cuboid. Ask them how many edges it has. Tell them that edges of a cuboid are lines. How can we describe the edges using what we have learnt about lines? Ask pupils to use their finger to trace the lines as they describe them. Prompt them with vocabulary they have learnt in previous lessons, including perpendicular, parallel, horizontal and vertical.

During Guided Practice, pupils are looking at irregular objects to identify horizontal and vertical lines.

Lesson 9: Chapter Consolidation

Textbook pages: 239 – 240

Lesson Objective

To be able to use knowledge of lines and shapes to solve problems.

Lesson Approach

Mind Workout in textbook and workbook
Pupils make words using letters that have specific line properties.

Math Journal
Pupils make a piece of art using lines and primary colours and describe how they will use it.

Self Check
Pupils complete this as a chapter summary and discuss what to do with their teacher if any boxes are not ticked.

Review 13, pages 183 – 184.