

Lesson Planning

In the following section, some examples of lesson plans are provided, along with some blank sheets that can be used for planning. It is not intended that these are the only models to be used with lesson planning. Many constraints will impact on the types of lesson plans that are used. In the first instance a model that works for the individual is critical so it is important to recognise what is your particular style for planning. Similarly, there may be ways that you prefer to work with your lesson plans and hence modifications on models are fine. The key consideration is that whatever models are used, that the principles of planning are adhered to.

Topic: _____ Grade: _____ Date: _____
 General Aim/Objective:.....
 Background Knowledge:

Resources:

Orientating Phase		
Time	Specific Objectives/Learning Outcomes	Teaching Strategies
Enhancing Phase		
Time	Specific Objectives/Learning Outcomes	Teaching Strategies
Synthesising Phase		
Time	Specific Objectives/Learning Outcomes	Teaching Strategies

Assessment: (what and how)

Self Evaluation:

Lesson:	Mathematics - Chance and Data
Year Levels:	Upper primary (6 and 7)
Lesson Time	30 mins
General Objective	The students should be able to interpret data in order to construct a pie graph
Resources:	Year 7 Source Book (pp 178-183); Students maths books, Rigby Year 7 Resource book (pp38, 64, 241-2). Example of a pie graph from an interesting source (Conservation magazine)
Background:	Students have a good working knowledge of general graphing skills, interpretation of data. They have been very interested in environmental issues and have been conducting an environment impact study of the road passing the school. They have collected data on the number of cars passing the school. They intend to write to Council requesting a roundabout be installed as there is high density traffic in the streets near the school.

ORIENTATING PHASE

<i>Specific Objectives</i>	<i>Teaching Strategies</i>
The students should be able to:	Whole class
• show motivation and interest	Number facts warm up.
• identify the uses for bar graphs	Discuss the work that has been done on bar graphs.
• recognise the need for bar graphs	Introduce the pie graph and discuss what they can recognise about the information provided.
• recognise part-whole relationships	Question as to how information from a preconstructed bar graph can be transformed into a pie graph use.
• recall the language and properties of circles	
• demonstrate how to use a protractor in the measurement of angles	

ENHANCING PHASE

<i>Specific Objectives</i>	<i>Teaching Strategies</i>
The students should be able to:	Small groups - of 3 to 4
• participate co-operatively in small groups	Provide students with data that is easily transformed into a pie graph - in tabular and bar graph form, relate to theme.
• interpret and organise data	Allow students to use resources in the classroom to construct their pie graph - include protractors, string, tape measures.
• construct a pie graph	Move around classroom, observe strategies being developed, offer assistance where difficulty and frustration seems to be occurring.
• demonstrate initiative in developing strategies for constructing a pie graph	One student to be nominated as reporter

SYNTHESISING PHASE

<i>Specific Objectives</i>	<i>Teaching Strategies</i>
The students should be able to:	Whole class
• report the strategy developed	Students are invited to front of class to report on the strategy developed within their group.
• evaluate their strategy	Students evaluate the effectiveness and accuracy of the strategy
• improve their strategy(where necessary)	Some students offer input into the evaluation of their own strategies and what they may do to improve their future ways of developing a strategy.

ASSESSMENT/EVALUATION

Observation - observe students responses and actions in the various phases to assess their understandings of bar graphs, the relationship between bar graphs and pie graphs; problem solving skills in an open-ended situation; persistence; co-operation and their strategies for the task.

Consultation: Discuss with students who seem to be struggling in the enhancing phase - assess whether difficulty is due to persistence/problem solving skills or conceptual difficulties.

Focused Analysis: Closing discussion will allow for a more focused analysis of conceptual knowledge, processes used and attitudes to the task.

Peer/Self Assessment: Final discussion will allow for peer evaluation of others' work and for individuals to assess and reflect on own work.

SELF REFLECTION

Strengths in this lesson:

What I would change next time:

Focus: - Questioning - Was I asking better questions

Curriculum area	Mathematics
Topic	Direct and indirect comparison of length
Year Level	lower primary (1/2)
Lesson Time	30-40 mins
General Objective	Students will be able to conduct direct and indirect comparisons of length.
Resources:	mystery bag with a range of objects of differing lengths, string, scissors, sticky tape, worksheets.

ORIENTATING PHASE

Specific Objectives

Children should be able to:

- recall and verbalise their knowledge of length
- visually identify objects through the attribute of length

Teaching Strategies

Create interest by having a mystery bag with a range of things in it which can be used as a stimulus for a discussion on length. Discuss which is longest, shortest, longer than the pipe cleaner and so on.

Revise how the students have been doing their measurement of length (informal units).

Introduce the problem of how they would measure objects when they can't be directly compared (eg, the video and the door frame; the blackboard and the window).

ENHANCING PHASE

Specific Objectives

Children should be able to:

- work co-operatively in small groups
- measure objects using direct and indirect comparison
- classify objects according to length

Teaching Strategies

Explain the activities to the students:

Activity 1: Direct comparison. In small groups, students take the objects from the mystery bag and find out what things are longer than an item identified by the teacher (eg the pipe cleaner). These are recorded in their maths books.

Activity 2: Indirect comparison. One person in the group measures his/her height. This is placed on a piece of string. As a group, find three things longer than the string (table, door, window) and three things shorter (book, bookshelf, 100s board). These are recorded in maths books.

EXTENSION ACTIVITIES

For groups who are able to work through these activities quickly, they can look for items which are almost the same height as themselves.

SYNTHESISING PHASE

Specific Objectives

Children should be able to:

- compare objects through direct and indirect comparison
- discuss the strategies used for comparing lengths of objects found in the classroom.

Teaching Strategies

Children sit back on the floor. Teacher asks students to identify which item is longer than another. Students are asked what objects they found to be longer than themselves and what items were not as long. Students are asked to discuss how they worked out their answers.

ASSESSMENT/EVALUATION/SELF REFLECTION

Observation - of students working in small groups - observe their measuring strategies and the dialogue between students.

Consultation - discuss the strategies students are using

Curriculum Area: Mathematics

Topic: Estimation and Rounding

Yr Level: Gr 4

Aim: Children should revise their estimation skills and be introduced to the concept of rounding through the use of concrete materials.

PHASE	OBJECTIVES	ORGANISATION	TEACHING STRATEGIES	RESOURCES	EVALUATION
Orientation	Children should be able to: <ul style="list-style-type: none">• display their knowledge of rounding to nearest 10 and 100• round up to the nearest ten when a five is in the ones column.	Children will be seated in their desks. Teacher will be at the front of the class and will circulate around as questions are asked.	Revise previous knowledge of estimation through the use of questions and the use of equipment. Ask the ch'n (for the number 335) is this closer to 300 or 400. Explain rounding using the roller coaster model	OHT with rounding roller coaster.	Observation of the students as they participate in the questioning. Use responses made to check understanding of rounding before moving on to next phase.
Enhancing	Children should be able to: <ul style="list-style-type: none">• round two- and three-digit numbers using the games• apply their knowledge of rounding to develop effective strategies for winning the game.• participate co-operatively in the group work	Five boards games with equipment. Ch'n work in small groups (5-6) on one of the games.	Explain the games to the students. When a rounding question is answered correctly the player moves along the shorter route to the next question. Teacher moves around class, checking for participation and assessment of students. Intervene when problems are observed with rounding.	<ul style="list-style-type: none">• 5 game boards• Question cards for each game• Different coloured counters and a die for each group	Observation of students as they play. Note their rounding of numbers. Observe students participation and co-operation in groups.
Synthesising	Children should be able to: <ul style="list-style-type: none">• verbalise their knowledge of rounding• identify numbers which round up and those which round down	Ch'n sitting in desks	Teacher stops game and instructs students to pack their games away. Teacher asks questions -open and closed. What do you round 16 to? How do you know which way to round a number?		Note responses made by students to the questions.
Self reflection					
References	Education Queensland (1987). Year 4 Source Book. Brisbane: GoPrint				

Curriculum Area: Mathematics

Topic: Picture Graphs

Yr Level: Gr 1/2

Aim: Children will construct picture graphs using personal attributes.

Background knowledge: Ch'n will have well developed counting skills, some will have limited experiences with picture graphs.

OBJECTIVES	TEACHING STRATEGIES	ORGANISATION/RESOURCES	EVALUATION
Children should be able to: <ul style="list-style-type: none">recall previous knowldge of picture graphsgroup themselves according to a particular criteria (eye colour)interpret basic information from the people graph	ORIENTATING PHASE Ask students what is special about them - leading towards the couor of their eyes. In pairs they identify their partners eye colour and hair colour Make a people graph - get the blue eyes to stand in one column, then the green eyes, etc Discuss which is the biggest, smallest, same etc. Explain that we can represent this information another way (ie a graph). Draw out information from ch'n. Explain the task - to draw own eyes on the paper and make it pretty with the eyelash, the other is to draw themselves and their hair.	Children seated one floor Resources - paper copies of "eyes" and "hair" - a standard square size one with an eye on it, the other with a circle (for the face). Black paper eyelashes Send ch'n back to desks by identifying the groups individually	Observing ch'n move into the coloums of the graph will indicate some knowledge. Questioning of ch'ns knowledge about the people graph of will indicate some of their understanding of the data collected.

ENHANCING PHASE

Children should be able to: <ul style="list-style-type: none">work creativelyclassify information according to the given attributes (hair and eyes)	At their desks the students colour in the eyes using appropriate colours. As this is completed, they are then pasted on the large sheet of paper which has a base line and identifiers already marked. Teacher will need to supervise to ensure pasting is relatively accurate. When the eyes have been done, the students will then complete their faces and repeat the process using the hair colour as the organiser.	Monitors distribute cutouts and eyelashes. Ch'n should have own glue and pencils. Ch'n sit at own desks. As students complete task, they move to the front of the room and sit on floor	Observe placement of eyes and hair on chart. Observe students at work to gauge persistence and enjoyment. Consult with students as they paste their eyes and hair - ask questions eg estimations of which might bethe most, smallest etc.
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Children should be able to: <ul style="list-style-type: none">• interpret (simple) data from picture graph	SYNTHESISING PHASE Ask ch'n which column as most, least, same. Ask how many in each column, Ask how many more in one column than another.	Ch'n seated on floor at front of room	Observe the responses of ch'n to the questions asked.
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Self assessment:

Curriculum Area: Mathematics

Topic: Ordinal numbers

Yr Level: Gr 1/2

Aim: To revise the concepts of ordinal numbers in a friendly game situation

Objectives	Time	Teaching/Learning Strageies	Organisation	Resources	Assessment
		ORIENTATING PHASE			
Students should be able to: <ul style="list-style-type: none">• verbalise ordinal numbers from 1-10• identify written and symbolic forms of ordinal numbers	3 mins	Revise the concept of ordinal numbers through questioning - a) what is the starting point b) that ordinal numbers can refer to location or position(1st in a race) and order in time (second turn) c) they can be written in symbolic form (1st) or written form (first). Use a group of students to be stimulus for discussion - who is third, what position is Rebecca.	Ch'n sit on floor		Use questions to check students' comprehension of earlier work
		ENHANCING PHASE			
Students should be able to: <ul style="list-style-type: none">• work cooperatively• identify and arrange their group according to the nominated sequence• organise groups when starting point alters• correctly identify position in a drawing.	20 mins	1. Play the "scatter game" - Children form teams of 10. Each child is given a card with an ordinal number on it (either in written or symbolic form). Music starts, students mix around class, music stops, students must form their teams, in the right order. Winning team is the first one complete and correct. At the end of each turn, team leader (1st) collects cards, jumbles them and then redistributes them. 2. Arrange 10 students at front of class. Distribute sets of cards among other students. Teacher calls out a number. First student to give card to correct person, scores a point for their team. 3. Students return to desks and monitors distribute worksheets. Students colour in the nominated animals (eg 10 ducks are drawn, student has to colour 3rd duck). Numerous BLM in resource books for this activity.	Whole class "roam" room. Students seated on floor. 10 chosen to stand at front. Students seated at desks	Sets of cards with ordinal numbers from 1-10. each set a different colour. Use symbolic and written forms.	Observe students forming teams - check they can order correctly. Observation of students identifying cards with peers. Responses on work sheet
		SYNTHESISING PHASE			
Students should be able to: <ul style="list-style-type: none">• recount ordinal position• identify location according to a nominated position	5 mins	As students complete worksheet,they return to the floor with their sheets. Teacher asks students to show on the OHT which animal they have coloured in on the worksheet. Discuss why these have been coloured in. Conclude with questions about where they would like to be in a race, drying dishes etc.	Students seated on floor.	OHT of worksheet.	Observation of responses made by students

References: Rigby Moving into Maths: Teachers Resource Book, Level 1. Self Evaluation: