Grade 7 Pre-Technical Studies

Term 2 - 44 complete lesson plans

Ready to teach, in the KICD lesson-plan format | 40-minute lessons | PDF and editable Word

ABOUT THIS PACK

44 complete, ready-to-teach Grade 7 Pre-Technical Studies lesson plans for Term 2, covering introduction to materials, metallic materials, non-metallic materials and measuring and marking out tools.

TOPICS IN THIS PACK

Topic	Name	Lessons
3.1	Introduction to Materials	6
3.2	Metallic Materials	10
3.3	Non-Metallic Materials	10
4.1	Measuring and Marking Out Tools	18

INSIDE EVERY LESSON PLAN

- The specific learning outcomes, key inquiry question, core competencies, values and PCIs, and the resources needed.
- A timed lesson flow: what the teacher does and what the learners do, from introduction to summary.
- The key content (a worked example, notes or a practical with its expected results), then four practice questions with the answers for the teacher.
- The common mistake to watch for, and ideas for learners who need support and for those ready for more.
- A four-level CBC assessment rubric (EE, ME, AE, BE), homework, and a blank reflection space to fill in after teaching.

A TASTE OF LESSON 1

Materials used in production

By the end of the lesson, the learner should be able to identify materials used in production

> **Materials are the substances things are made from.**
> Production is making goods (furniture, clothes, buildings, tools).
> Materials used in production: wood, metals (steel, aluminium, copper), plastics, glass, stone, cement, clay and ceramics, paper, rubber, cloth (fibres), leather.

You also receive this pack as an editable Word file, so you can change any lesson to suit your class before you print it. Lessons follow the order of the KICD curriculum design.

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Materials used in production

Strand 3.0 Materials for Production > Sub-strand 3.1 Introduction to Materials | Lesson 1 of 6 | 40 minutes

SCHOOL	TEACHER	DATE
CLASS / STREAM	TIME	ROLL (B / G)

SPECIFIC LEARNING OUTCOME(S)

By the end of the lesson, the learner should be able to identify materials used in production

KEY INQUIRY QUESTION(S)

- How are materials used sustainably?

CORE COMPETENCIES, VALUES AND PCIS IN THIS LESSON

COMPETENCY	**Self-efficacy**	Learners attempt each task with confidence and see that effort improves results.
COMPETENCY	**Critical thinking and problem solving**	Learners choose a method, check their answers and give reasons for their choices.
VALUE	**Responsibility**	Learners look after shared materials and finish every task.
VALUE	**Peace**	Learners settle differences calmly during group work.
PCI	**Environmental education**	Examples link to caring for the school and home environment.

LEARNING RESOURCES

A box of mixed material samples (nails, tins, wire, wood, plastic, glass, paper, cloth, stone) | Magnets | Charts | Learners' exercise books

ORGANISATION OF LEARNING

Whole class for the introduction and the summary; pairs or groups of four to five for guided practice; individual work for the independent tasks.

KEY WORDS

material | production | raw material | metallic | non-metallic | sustainable | recycle | reuse

THE LESSON AT A GLANCE

Introduction	Teacher models	Guided practice	On their own	Wrap-up
6 min	9 min	10 min	9 min	6 min

Inside this plan: the step-by-step lesson flow with what the teacher and learners do, the key content, practice questions with answers, a common mistake to watch for, an assessment rubric on the four CBC levels, support and extension ideas, homework and a reflection page.

LESSON FLOW

Stage	Minutes	The teacher	The learners
Introduction	6	Greet the class and ask: "Key question: how are materials used sustainably? Look at your desk. What is it made of?" Take two or three answers, link them to earlier work, then state today's outcome.	Answer the starter question, recall what they already know and read the outcome aloud.
Step 1: Teacher models	9	Take learners through "Materials are the substances things are made from." (key ideas on the next page), explaining as you go. Use a box of mixed material samples (nails, tins, wire, wood, plastic, glass, paper, cloth, stone), magnets, charts. Ask learners to predict what comes next before you show it.	Watch, predict the next step, ask questions and note the key steps in their exercise books.
Step 2: Guided practice	10	Give questions 1 and 2. Move round the groups, ask "How do you know?" and correct errors kindly on the spot.	Work in pairs or small groups, explain each step to a partner and check one another's answers.
Step 3: Independent practice	9	Set questions 3 and 4 for individual work. Mark as you walk round and note who needs help in the next lesson.	Work on their own, then swap books with a partner to check.
Summary and conclusion	6	Ask two or three learners to state the key idea in their own words. Give this exit question and check the answers: "Which activity supplies metals?"	Say the key idea in their own words and answer the exit question in the exercise book.

KEY IDEAS

Materials are the substances things are made from.
Production is making goods (furniture, clothes, buildings, tools).
Materials used in production: wood, metals (steel, aluminium, copper), plastics, glass, stone, cement, clay and ceramics, paper, rubber, cloth (fibres), leather.
Many come from economic activities such as mining (metals, stone), forestry (wood), farming (cotton, leather) and fishing (fish skins, shells).

PRACTICE QUESTIONS - WITH ANSWERS FOR THE TEACHER

No.	Question	Answer
1	What are materials?	**The substances things are made from**
2	What is production?	**Making goods**
3	Name four materials used in production.	**Wood, steel, plastic and glass**
4	Which activity supplies metals?	**Mining**

WATCH OUT FOR

Mixing up a material (wood) with the item made from it (a chair).

ASSESSMENT RUBRIC - THE FOUR CBC LEVELS

Level	What the learner can do
Exceeds expectations (EE)	Can identify materials used in production confidently and accurately, explain the method used, and apply the idea to new or unfamiliar problems.
Meets expectations (ME)	Can identify materials used in production accurately in familiar situations; notices and corrects slips without help.
Approaches expectations (AE)	Can partly identify materials used in production, or does so with prompts from the teacher or a partner; makes some errors.
Below expectations (BE)	Cannot yet identify materials used in production without direct help; needs the idea taught again with concrete objects.

SUPPORT AND EXTENSION

Learners who need support	Handle real samples.
Learners ready for more	List the materials in a bicycle. (Answer: Steel, rubber, plastic, leather or foam (answers vary))
Inclusion	Seat learners with low vision near the board and read aloud whatever you write; use large, clear, tactile materials; allow extra time; pair with a patient partner; use gestures or Kenyan Sign Language for the key words.

HOMEWORK AND FOLLOW-UP

Redo questions 3 and 4 neatly in the exercise book. Then tell someone at home what you learned about "materials used in production" and bring one question of your own to ask next lesson.

TEACHER SELF-CHECK

- Did every learner get a turn to handle materials or explain their thinking?
- Did most learners meet the outcome? Write down the names of those who did not.
- Was the pace right — did any step take too long or too short a time?
- Which competency and value did I see learners showing?
- What will I change the next time I teach this lesson?

REFLECTION ON THE LESSON / SELF-REMARKS

Write this after teaching - what worked, what to change, which learners need follow-up.

Metallic and non-metallic materials

Strand 3.0 Materials for Production > Sub-strand 3.1 Introduction to Materials | Lesson 2 of 6 | 40 minutes

SCHOOL	TEACHER	DATE
CLASS / STREAM	TIME	ROLL (B / G)

SPECIFIC LEARNING OUTCOME(S)

By the end of the lesson, the learner should be able to distinguish between metallic and non-metallic materials

KEY INQUIRY QUESTION(S)

- How are materials used sustainably?

CORE COMPETENCIES, VALUES AND PCIS IN THIS LESSON

COMPETENCY	**Self-efficacy**	Learners attempt each task with confidence and see that effort improves results.
COMPETENCY	**Critical thinking and problem solving**	Learners choose a method, check their answers and give reasons for their choices.
VALUE	**Responsibility**	Learners look after shared materials and finish every task.
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LEARNING RESOURCES

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THE LESSON AT A GLANCE

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Inside this plan: the step-by-step lesson flow with what the teacher and learners do, the key content, practice questions with answers, a common mistake to watch for, an assessment rubric on the four CBC levels, support and extension ideas, homework and a reflection page.

LESSON FLOW

Stage	Minutes	The teacher	The learners
Introduction	6	Greet the class and ask: "Tap a nail and a piece of wood on the desk. How do they sound?" Take two or three answers, link them to earlier work, then state today's outcome.	Answer the starter question, recall what they already know and read the outcome aloud.
Step 1: Teacher models	9	Take learners through the key ideas on the next page, explaining as you go. Use a box of mixed material samples (nails, tins, wire, wood, plastic, glass, paper, cloth, stone), magnets, charts. Ask learners to predict what comes next before you show it.	Watch, predict the next step, ask questions and note the key steps in their exercise books.
Step 2: Guided practice	10	Give questions 1 and 2. Move round the groups, ask "How do you know?" and correct errors kindly on the spot.	Work in pairs or small groups, explain each step to a partner and check one another's answers.
Step 3: Independent practice	9	Set questions 3 and 4 for individual work. Mark as you walk round and note who needs help in the next lesson.	Work on their own, then swap books with a partner to check.
Summary and conclusion	6	Ask two or three learners to state the key idea in their own words. Give this exit question and check the answers: "Which group conducts electricity well?"	Say the key idea in their own words and answer the exit question in the exercise book.

KEY IDEAS

Metallic materials (metals): shiny when clean or cut, ring when struck, conduct heat and electricity well, can be bent or hammered into shape, mostly heavy for their size. Examples: steel, iron, aluminium, copper.
Non-metallic materials: usually dull, do not ring, poor conductors (good insulators), many break or tear instead of bending. Examples: wood, plastic, glass, stone, paper, rubber.
Quick tests: look (shine), tap (ring), feel (metals feel cold), bend (metals bend, many non-metals snap or tear).

PRACTICE QUESTIONS - WITH ANSWERS FOR THE TEACHER

No.	Question	Answer
1	Give two differences between metals and non-metals.	**Metals are shiny and conduct electricity; non-metals are dull and insulate**
2	Name two metallic materials.	**Steel and copper**
3	Name two non-metallic materials.	**Wood and plastic**
4	Which group conducts electricity well?	**Metallic materials**

WATCH OUT FOR

Shiny plastic mistaken for metal; test, do not only look.