**TECHNOLOGY: TERM 2 LESSON PLANS GRADE: 7**

**SCHOOL: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TEACHER: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**DURATION: DATE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **CORE CONTENT AREA** | **STRUCTURES** |

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| **SPECIFIC AIMS**  |  * Develop and apply specific design skills to solve technological problems
* Understand the concepts and knowledge used in technology education and use them responsibly and purposefully
* Appreciate the interaction between peoples values and attitudes, technology, society and the environment
 |
| **PRIOR KNOWLEDGE***(expected knowledge from previous grade)* | **Grade 7:** Minimum understanding of Technology; last did structures in Grade 5 |
| **INCLUSIVITY***(accommodating learners with specific barriers to learning)* |  |

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| **Hrs/ min** | **TEACHER ACTIVITIES** | **LEARNER ACTIVITIES** |
| 120 min  | **Teaching and Learning Outcomes****Learners must be able to:**1. Understand and apply the design process skills
2. Explain Technology as a school subject
3. List Technological skills relevant for different careers.

**Introduction:** * Invite learners to describe Technology as a school-subject and show their evidence of work from the previous year/s.
* Instruct learners to create a glossary of Technology terms at the back of their exercise book
* Definition for Technology.
* Introduce scenario for the PAT.
* Explain the following concepts using suitable examples from learners’ work; Investigate, Design, Make, Evaluate and Communicate.
* Describe possible career opportunities and ask learners to identify and list relevant technological skills required
* Show examples of best practice from the previous year’s work.
 | **Grade 7:*** Responds to questions from the teacher and peers
* Illustrate the design process in exercise book
* Start a technology glossary at the back of the exercise books
* List possible careers and identified technological skills
* Learners complete a case study.
* **Resources:**

Exercise books, Textbooks, Sasol Inzalo textbooks, examples of project portfolios, pictures of possible careers. * **Assessment:**

Informal, teacher observation |
| **Reflection:**

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| **Hrs/ min** | **TEACHER AND LEARNER ACTIVITIES** | **LEARNER ACTIVITIES** |
| 120 min | **Teaching and Learning Outcomes****Learners must be able to:**1. Explain the design features of a school desk.
2. Write down the design brief with specifications for a school desk.

**Introduction: (Grade 7)*** Discuss the following design considerations using suitable grade appropriate examples;

Fitness-for purpose: Who is it for? What is it for? Does it do the job? Is it cost effective? Is it safe? Is it easy to use (ergonomics), Does it look good? (aesthetics) Will it affect society? Will it affect the environment?* Take a cool drink can or any other grade appropriate product and engage learners in a class discussion with the questions listed above.
* Divide the learners into grade groupings. Each group selects a different product that is available in the classroom and discusses the product in relation to the questions above and completes responses in exercise book.
* Each group gives feedback to the class.
* Instruct learners to sketch the product used in the previous activity in 3D. (use as a baseline for drawing skills)
 | **Grade 7:*** Responds to questions orally
* Responds to group discussion by writing answers down in exercise book.
* Discuss the design features of a school desk.
* Write the design brief with specifications of a school desk.
* Draws and completes 3-D sketch
* **Resources:**

Exercise book, text books, Sasol Inzalo textbooks**,** Examples of products * **Assessment:**

Informal teacher and peer assessment |
| **Reflection:** |

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**DURATION: DATE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ GRADE: 7**

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| **CORE CONTENT AREA** | **STRUCTURES** |

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| **SPECIFIC AIMS**  |  * Develop and apply specific design skills to solve technological problems
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 |
| **PRIOR KNOWLEDGE***(expected knowledge from previous grade)* | Grade 7: Types of structures  |
| **INCLUSIVITY***(accommodating learners with specific barriers to learning)* |  |

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| **Hrs/ min** | **TEACHER ACTIVITIES** | **LEARNER ACTIVITIES** |
| 120 min  | **Teaching and Learning Outcomes****Learners must be able to:**1. Identify and describe categories and types of structures as man-made, natural, frame, shell and solid structures
2. Identify and describe structural components
3. Identify and describe properties of materials

**Introduction: (Grade 7)*** Show different examples and types of structures and ask learners to identify uniqueness and different materials for each.
* Use illustrations and flashcards to discuss the following structural concepts:
* Categories of structure; man-made and natural structures
* Types of structures: shell, frame, solid structures
* Properties of materials: hard, soft, stiff, strong, fire resistant, waterproof. etc.
* Components of frame structures: columns and beams
* Ask learners to define the differences of each type of structure
* Instruct Grade 7s to complete worksheet and monitor later.
 | **Grade 7:*** Respond to questions
* Classify structures as natural, man-made, shell, frame and solids and present as a table on worksheet.
* Write a definition for each type of structure
* **Resources:**

Exercise book, textbook, Sasol Inzalo textbook, worksheets, pictures and illustration of structures, components * **Assessment:**

Informal teacher and peer assessment |
| **Reflection:** |

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| **Hrs/ min** | **TEACHER ACTIVITIES** | **LEARNER ACTIVITIES** |
| 120 min | **Teaching and Learning Outcomes****Learners must be able to:**1. Identify the purpose of structures; contain, protect, support or span a gap.
2. Explain why structures fail
3. Explain the properties of common materials

**Introduction: (Grade 7)*** Bring examples of different structures or use examples in the classroom, and discuss the function or purpose of each type of structure. Refer to frame structures that span gaps, support loads or are used to support various parts of an object in the correct position, and to shell structures that protect and contain, and solid structures used as a mass.
* Instruct grade 7 learners to complete the worksheet and follow-up on progress later
 | **Grade 7:*** Respond to questions
* Identify the purpose of different structures used for different products shown on a worksheet.

 * **Resources:**

Exercise books, Textbook, Sasol Inzalo textbook, worksheets, examples of structures* **Assessment:**

Informal teacher and peer Assessment **Grade 8:** |
| **Reflection:** |

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| **Hrs/ min** | **TEACHER ACTIVITIES** | **LEARNER ACTIVITIES** |
| 120 min | **Teaching and Learning Outcomes****Learners must be able to:*** Strengthen structures using folding, tubing and triangulation
* Identify structural components and the impacts of forces on structures
* Identify internal braces and triangulation as methods to make structures rigid
* Identify static and dynamic forces and describe the impact on structures
* Identify even and un-even loads and describe the impact on structures

**Introduction: (Grade 7)*** Revise properties of materials and ask learners how they influence fitness for purpose, cost, safety and the manufacturing process of products
* Use illustrations to show different methods used to strengthen structures: folding, tubing and triangulation
* Demonstrate how a flat sheet of paper can be folded into different shapes e.g. a square or a triangular shape and also rolled into a tube to support a load when used as a beam or a column
* Demonstrate triangulation as a method used to strengthen a flat 2-D frame structure using paper straws or strips of card
* Instruct grade 7 learners to complete practical activity and follow-up on progress later
 | **Grade 7:*** Learners respond to questions
* Working in pairs learners follow instructions and complete the practical activities to make and test different shapes to reinforce frame structures
* Learners sketch their test, and records the results and present conclusions
* **Resources:**

Exercise book, textbooks, Sasol Inzalo textbook, activity sheet, scissors, sheets of A4 paper and thin card, ruler, suitable objects to use as loads to test the structure, paper straws, pins and tape* **Assessment:**

Informal teacher assessment  |
| **Reflection:**  |

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**DURATION: 1 WEEK (**WEEK 6)  **DATE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ GRADE: 7,**

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| **Hrs/ min** | **TEACHER AND LEARNER ACTIVITIES** | **LEARNER ACTIVITIES** |
| 120 min | **Teaching and Learning Outcomes****Learners must be able to:**1 Apply the different techniques of graphics.2. Understand how structures can be strengthened and the forces acting on them.3. Understand the design process of structures**Introduction: (Grade 7).*** A teacher explains to the learners how structures are strengthened and which forces act on the structures.
* Teacher asks the learners to complete the worksheets.
* Teacher explains the purposes of graphic communication.
* All the conventions applicable to Graphics are demonstrated to the learners.
* Teacher demonstrates the different graphic techniques
 | **Grades 7*** Responds to questions orally
* Discus and Complete Worksheets on how structures are strengthened.
* Complete free hand sketching of two different design ideas for a cell phone tower. (Mini-PAT)
* Make 2D drawings of one face of an object using conventions.
* Make an artistic drawing in single vanishing point perspective applying texture rendering shading and colour. (Mini-PAT)
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| **Reflection:** |