

Electronics Lessons 7 & 8 (Build an Artbot)

TEACHING/LEARNING ACTIVITIES

Lesson 7

- **Warm up:** (PowerPoint). General overview of the unit.
 - **Previous knowledge:** Review vocabulary & Maker diaries
 - **Introduce new terms:** (motor & vibration motor) Ask students to write bilingual entries in their maker diaries for their new terms.
- Ending the lesson:** Show students the build kits. Students recognize the items and say their names in the kit. Ask what they think we will do. Allow students to examine the robot chassis. Ask students to explain how the electricity will flow through.

Lesson 8

- **Safety Review :** Follow instructions! Be careful around electricity. Be mindful of the motor.
- **Motivation:** Chicky Findion vs The Grimble Drama. Can Chicky save Cluck University?
- **Build Instruction:** Show students the steps of how to build their Artbot.
- **Troubleshooting:** During the build, when students encounter difficulties, they talk with their teammates or with the teachers to find a solution. (motor will not spin, spinner disconnects, Artbot doesn't move enough, etc)
- **Thinking Activity:** How will the Artbot behave with a different spinner?
- **Make Adjustments:** Students take turns creating robot artwork, and adding human touches to their creations.
(What is it? It's a _____.)
- **Worksheet:** Complete worksheet(s)
- **Ending the lesson:** Review parts of the Artbot. How does it move? Where does the electricity flow?

LEVEL**4th grade****TIMING****2 lessons****Aims**

- To present the content of the unit.
- To introduce artistic uses of a simple circuit.
- To make learners aware of and build on prior knowledge of electronics and circuit components.
- To help learners understand that learning can be achieved in a second language.
- To help learners understand that keeping a record of new words is important (their Maker Diary).

Criteria for assessment

Teacher, peer- and self-assessment processes will be used to assess how well learners:

- understand the flow of electricity
- distinguish between different types of circuits
- recognize electronic components
- identify troubles while building and make adjustments
- contribute to and use their Maker Diaries

TEACHING OBJECTIVES

(What I plan to teach)

Content

- Review of the topic.
- Different types of circuits.
- Path of electricity.
- Artistic expression through science

Cognition

- Provide learners with opportunities to understand the key concepts and apply them in different contexts.
- Enable learners to identify electronic components.
- Encourage knowledge transfer about electronics and predictions using visual images and hands on experience.
- Vocabulary building, learning and using.
- Arouse learner curiosity — creative use of technology.

Communication**Language of learning**

- Key vocabulary: shaking, drawing, spinning, motor, vibration, robot

Language for learning

- Asking the teacher questions: *There is a problem. Can you look at this Artbot, please? My motor is not spinning.*
- *Classifying: The different circuit types*
- Other:
How do you spell ...? What does... mean?

LEARNING OUTCOMES

(What learners will be able to do by the end of the lessons)

By the end of the unit, learners will be able to:

- demonstrate understanding of the concept of circuits and its related features
- distinguish between simple, series, and parallel circuits
- describe how electricity flows
- classify information
- successfully engage in visual matching between concepts and images
- interpret visual information
- use language creatively
- ask and respond to *wh*- questions about their work
- use a Maker Diary of new words.