

**CODE/MOE/UOIT Makerspaces Project**

**Grade 2 Language Arts: Writing About Circuitry**

|  |  |
| --- | --- |
| **BIG IDEAS:**  Generate, gather, and organize ideas and information to write for an intended purpose and audience  **Curriculum Expectations:**  1.2 Generate ideas about a potential topic, using a variety of strategies and resources (e.g., formulate and ask questions such as the five W’s [who, what, when, where, why] to identify personal experiences, prior knowledge, and information needs; brainstorm ideas with a partner)  3.3 Confirm spellings and word meanings or word choice using a few different types of resources (e.g., locate words in alphabetical order by using first and second letters in a primary dictionary, on a word wall, or in an online picture dictionary) | |
| **Learning Goals:**  “We are learning to…”  Brainstorm ideas and write about circuitry using the MakeyMakey. | **Success Criteria:**  “We will be successful when…”  We brainstorm, complete a circuit, and write about our experience. |
| **Lesson Overview:**  Smartboard introduction to MakeyMakey and show MakeyMakey video.  Students had prior circuit introduction.  Students will use MakeyMakey during a centre during literacy centres. They will be in groups of two. They will brainstorm together and work on MakeyMakey Bongos then complete writing sheet. | |
| **Materials and Technology:**   * Smartboard * Computer ( MakeyMakey Bongos) * MakeyMakey Kit * Internet * Playdough * Writers workshop paper | |
| **Student Accommodations/Modifications:**   * One to one support * Quiet space * Extra time * Small group instruction * Modelling * Differentiated worksheets | **Lesson will be differentiated by:**   * **Content, specifically:** * **Process, specifically:** * **Product, specifically:** Writers Workshop Paper * **Environment, specifically:** |
| **MINDS ON: Getting Started** | |
| During this phase, the teacher may:  • activate students’ prior knowledge;  • engage students by posing thought-provoking questions;  • gather diagnostic and/or formative assessment data through observation and questioning;  • discuss and clarify the task(s). | During this phase, students may:  • participate in discussions;  • propose strategies;  • question the teacher and their classmates;  • make connections to and reflect on prior learning. |
| Describe how you will introduce the learning activity to your students. What key questions will you ask? How will you gather diagnostic or formative data about the students’ current levels of understanding? How will students be grouped? How will materials be distributed?  (Approx. 5-10 minutes)  Smartboard MakeyMakey introduction video. <https://vimeo.com/60307041>  Diagnostic: Prior introduction to circuitry and anecdotal records  APK and explain task at new centre. Model new centre as a class.  Key Questions (while at centre): How is this working?    Students will be in groups of two at the centre. There will be:  1 computer  1 MakeyMakey Kit  Aluminum Foil  1 Playdough set | |
| **ACTION: Working on it** | |
| During this phase, the teacher may:  • ask probing questions;  • clarify misconceptions, as needed, by redirecting students through questioning;  • answer students’ questions (but avoid providing a solution to the problem);  • observe and assess;  • encourage students to represent their thinking concretely and/or pictorially;  • encourage students to clarify ideas and to pose questions to other students. | During this phase, students may:  • represent their thinking (using numbers, pictures, words, manipulatives, actions, etc.);  • participate actively in whole group, small group, or independent settings;  • explain their thinking to the teacher and their classmates;  • explore and develop strategies and concepts. |
| Describe the task(s) in which your students will be engaged. What misconceptions or difficulties do you think they might experience? How will they demonstrate their understanding of the concept? How will you gather your assessment data (e.g., checklist, anecdotal records)? What extension activities will you provide?  (Approx. 20 minutes)  APK and explain task at new centre. Model new centre as a class (whole group instruction).  Review the MakeyMakey materials and how the circuits are created  Key Questions (while at centre): What did you brainstorm about? How is this working? What can you show me? (small group instruction)  Once student have learned through exploratory learning, they will start their writing (using differentiated worksheet). Students will use word wall for appropriate vocabulary.  They might experience difficulties with the circuitry but through exploratory learning with their partner, they will be able to problem solve.  Encourage students to explore different forms of writing such as procedural writing and journal entries.  Worksheets will provide differentiated instruction (attached below).  Gather assessment data (anecdotal records and worksheets). | |
| **CONSOLIDATION: Reflecting and Connecting** | |
| During this phase, the teacher may:  • bring students back together to share and analyse strategies;  • encourage students to explain a variety of learning strategies;  • ask students to defend their procedures and justify their answers;  • relate strategies and solutions to similar types of problems in order to help students generalize concepts;  • summarize the discussion and emphasize key points or concepts. | During this phase, students may:  • share their findings;  • use a variety of concrete, pictorial, and numerical representations to demonstrate their understandings;  • justify and explain their thinking;  • reflect on their learning. |
| How will you select the individual students or groups of students who are to share their work with the class (i.e., to demonstrate a variety of strategies, to show different types of representations, to illustrate a key concept)? What key questions will you ask during the debriefing?  (Approx. 5-10 minutes)  Meet on the carpet (whole group instruction).  Share and analyse findings and strategies.  Encourage students to explain a variety of learning strategies.  Reflect on their learning.  Clarify misunderstandings.  Summarize the discussion and emphasize key points or concepts. | |





