

**CODE/MOE/UOIT Makerspaces Project**

**Grade 6, 7, 8 Visual Arts**

**Light in Visual Arts**

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| **Lesson Objectives:**  **Students think critically to solve problems, and make informed decisions using appropriate digital tools and resources.**  **Curriculum Expectations:**  **Visual Arts:** use elements of design in artworks to communicate ideas, messages, and understandings for a specific audience and purpose  **ICT Standards:** participates in a digital simulation or game to explore concepts and/or determine outcomes using robotics; plan and manage activities to develop a solution or complete a project | |
| **Learning Goals:**  “We are learning to…”  -use drawings of various complexities to problem solve (code) robotics  **-use 21st Century Learning Goals:**  -work collaboratively (together)  -problem solve  -talk through our learning  - listen to each other  -be creative | **Success Criteria:**  “We will be successful when…”  **-**we have coded the robotics to change colors to match the drawing |
| **Lesson Overview:**  **Working in groups, students will focus on coding for this lesson. Students will create a drawing related to a specific topic, idea or subject. They will use the sphero to outline their drawing changing colors to simulate the color of the lines.** | |
| **Materials and Technology:**  -chart paper  -sphero robotics  -iPads  -markers | |
| **Student Accommodations/Modifications:** | **Lesson will be differentiated by:**   * **Content, specifically:** * **Process, specifically: extended deadlines** * **Product, specifically:** * **Environment, specifically: one on one support** |
| **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. |
| **-**students access prior knowledge of the 21st century competencies and the importance of developing the skills to complete tasks requiring innovation/creativity.  -students will use the spheros to review coding and remote control of spheros. Students will share their challenges of coding and controlling the sphero.  -students will propose strategies | |
| **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?  -students will design a picture of personal interest, or related to a subject/theme  -students will code a sphero to simulate the color pattern and/or design used for their drawing.  -students will use the sphero spk app:    -assessment: teachers may use a checklist or anecdotal notes to record students engaged in communication of specific ideas related to problem solving | |
| **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;  • clarify misunderstandings;  • 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. |
| Using a exit ticket or journal entry to share their responses...  -Metacognition Questions:   1. In what way have the 21st century skills, listening and speaking skills helped you in coding to complete the color pattern? 2. In what way, was class conversation/discussion helpful in generating solutions for the task? | |