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| MSPLesson Plan |
| **NAME: Teresa Robertson, Jodie Napier** |
| **SUBJECT/GRADE RANGE: 7th Science** |
| **TOPIC: Waves** |
| **List of appropriate standards that support the lesson.**   * MS-PS4-1 * MP.2 * MP.4 * 7.RP.A.2 * SL.8.5 |
| **List of appropriate objectives that guide the lesson.**   * Students identify the characteristics of a simple mathematical wave model. * Students apply simple mathematical wave model to a physical system or phenomenon. |
| **An equipment list in table format, stating the quantity and source for each item.**   |  |  |  | | --- | --- | --- | | Equipment | Quantity | Source | | Rope | 4- 10ft pieces |  | | Interactive Notebook Page | One per student |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |
| **List of safety requirements for your lesson. (when applicable)** |

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| **A detailed plan of instruction including activities, timeline, and questions you plan to ask students.**   |  |  |  | | --- | --- | --- | | ***Engagement*** | | | | Timing | Activities | Planned Questions & Expected Answers/Misconceptions | | 7  minutes | Drop of water <https://www.youtube.com/watch?v=-DdSGOCCFpE> (Video) | Ask the students what do these things all have in common? | | Flicker a Flashlight. | *The students should eventually get to waves.* | | Strike a tuning fork (or create a loud sound) |  | |  |  | | ***Exploration*** | | | |  | | | | Timing | Activities | Planned Questions & Expected Answers/Misconceptions | | 13-25  minutes | Separate the class into 4 groups. Have each group stand along one wall in the room. Give each group a section of rope. |  | | Instruct students to stand in a straight line and everyone has two hands on the rope.  Have the students create a wave with the rope.  Give them time to work out their process.  It will take time for the students to work together to get them to compromise to get the shape of the wave correct. (To come to a consensus as to what the peak and the trough and midline for the wave.) | You can hint around about being at a ball game if the students get stumped on what to do by asking, “Has anyone ever done the wave?”  You may have to ask the students “What is the shape of a wave, is it smooth or does it have sharp areas of up and down?) | | Tell the students “When I say pause, pause your wave”. (If you say stop, they tend to put their hands down.)  Note the similarities; we are going to call these the characteristics of a wave. | When the students hold their waves, ask them what they see.  How is their wave similar or different from the other groups’ waves? (The students should respond with one wave is larger than another or another groups has more ups and downs.) | |  |  | | ***Explanation*** | | | |  | | | | Timing | Activities | Planned Questions & Expected Answers/Misconceptions | | 30 minutes | A list of wave characteristics will be on the board (term only). Based on their discussions the students must identify the term with the characteristics that they identified on the wave. | This is a group discussion, roam and ask as needed “why did you place this term with this characteristic” | |  |  | | Once the students have completed matching the terms with their own descriptors, they will take out their interactive notebooks to record their information.  They will define the characteristics on the input page and identify and label the characteristics of waves from a printed document to paste onto their output page. (Differentiation: students who need scribes will receive a copy of the terms to paste into their notebook.) |  | |  |  | | ***Elaboration*** | | | |  | | | | Timing | Activities | Planned Questions & Expected Answers/Misconceptions | | 3 minutes | As we wrap up the lesson, ask students to find an example of a wave in their personal world that they will bring the next lesson for discussion. | Some students will bring back identical examples as the engagement activity. | |  |  | |  |  | |  |  | | ***Evaluation*** | | | | See below | | | |
| **Assessments. A copy (or description) of how you will assess whether the students have achieved your objectives along with a key showing how you will evaluate responses.**  Interactive Notebook, Diagrams, Modeling of the wave. |
| **Any visual aids and handouts that you will use.**  <https://www.youtube.com/watch?v=-DdSGOCCFpE>  http://jyounghewes.tripod.com/science\_notebooks.html |