**North East School Division Planning Organizer**



 **Science Grades 6 - 9**

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| **Stage 1 – Begin With the End in Mind** |
| **Big Ideas** What do we want students to remember 40 years from now? |
| **Why should I care about space?** |
| **Outcomes** (Circle the verbs or skills, underline the qualifiers |
| **SS6.1 RESEARCH and REPRESENT the physical characteristics of the major components of the solar system, including the sun, planets, moon, asteroids and comets.****SS6.2 ASSESS the efficacy of the various methods of REPRESENTING and INTERPRETING astronomical phenomena, including phases, eclipses and seasons.****SS6.3 EVALUATE past, current and possible future contributions of space exploration programs including space probes and human spaceflight, which support living and working in the inner solar system.****Research****Represent****Assess****Evaluate** |
| **Understandings** What do we hope students will come to understand as a result of learning? Think: Students will understand that… | **Essential Questions** Questions for deeper understanding that invite deep thinking about the ideas and issues throughout the unit. |
| 1. Our solar system is more than just planets, but includes many other bodies.
2. We can study space by looking at predictable patterns.
3. All ways of knowing (ie First Nations and Metis) add to our understanding of what we see in space.
4. Advances in technology have expanded our ability to observe and study objects in our solar system.
5. History has changed the way that we observe space.
6. Astronomical phenomena can be seen in music, dance, drama, visual art and stories.
7. Canadians have contributed to our understandings of space.
8. Understanding space allows us to organize and predict events in our lives.
9. The knowledge we have concerning space is always expanding.
 | 1. What components make up the “Solar System”?
2. How do objects move within the solar system?
3. How are these movements predictable?
4. How have people used these patterns or cycles to survive in nature?
5. How does being open to all ways of knowing add to our understanding of what we see in space?
6. How have advances in technology expanded our ability to observe and study objects in space?
7. How does understanding space correlate with my everyday needs?
8. How can astronomical information be represented accurately?
9. How may we take the daily phenomena of space for granted?
10. What is happening in space right now?
11. How does understanding space correlate with my everyday needs?
12. What predictions are you able to make that will occur in space travel in your lifetime?
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| **Students need to know:** What is essential knowledge for students to have in order to demonstrate their understanding of the outcomes?  | **And be able to do:** What should they eventually be able to do as a result of their learning experiences in order to achieve the outcome? Should reference the indicators. Think: verb.  |
| 1. How to use star charts and record constellations.
2. The major components of the solar system are the sun, planets, moons, asteroids and comets.
3. How to create a scale-sized model.
4. How to apply scale to a model.
5. The different ways we observe space.
6. What causes seasons, phases and eclipses.
7. Astronauts must meet their needs of food, water, shelter and waste elimination in a much different way than here on earth.
8. Environmental barriers to living and working in space.
9. The Canadian achievements in space that have lead to new inventions and applications.
10. How to use technology (an interactive power point) to display pertinent information.
11. How to organize information according to a goal.
 | 1. Organize print and digital information in a logical way.
2. Create questions related to astronomical phenomena.
3. Create an itinerary.
4. Compile information about the physical characteristics of the solar system.
5. Analyze historical and current developments that allow us to observe the solar system.
6. Construct a timeline of space exploration.
7. Evaluate different sources of information.
8. Examine how people of different cultures have recorded and used understandings of astronomical phenomena to solve practical problems.
9. Observe the night sky and record data.
10. Describe the heavens from a first nations perspective.
11. Create a scale sized model of the solar system.
12. Propose questions related to astronomical phenomena.
13. Analyze how life can be supported in space.
14. Describe scientific ideas and discoveries that support space exploration
15. Make predictions about future space travel.
16. Create an interactive power point.
17. Apply information gathered from multidisciplinary sources.
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