

**Contributed by...
Piscataway Township Schools
Instructional Plan**

| Week of: | | Teacher/ Grade | | Subject/ Period | SCIENCE |
|---|-------------------------|---------------------------|--|----------------------------|----------------|
| Theme: | Introduction to Science | | | | |
| Enduring Understandings | | | | | |
| Standardizing measures allows people to accurately describe the world. The metric system is not difficult to apply. The metric system is based on the number 10. All measures in the scientific world are based on the SI system, or the metric system. | | | | | |
| Essential Questions | | | | | |
| What is the best way to represent data? | | | | | |
| Objectives | | | | | |
| Students will know... Consequences, both academically and medically, with failure of following safety procedures. The specific safety procedures for lighting and working with Bunsen burners. The metric system is used to measure scientific data. Metric units can be converted into smaller and larger units based on a decimal system. The balance is used to measure mass. The graduated cylinder is used to measure liquid volume. That to measure an irregularly shaped item, one must use the water displacement method. | | | | | |
| Students will be able to... Use both a triple-beam balance and a double-pan balance to accurately measure mass. Use a graduated cylinder to accurately measure liquid volume. Use a thermometer to measure degrees Celsius. Use a graduated cylinder to measure the volume of an irregular shaped object. Use analysis skills to answer an open-ended question. Complete notes while observing and demonstrating proper ignition of the Bunsen Burner. | | | | | |
| Content Vocabulary | | | | | |
| Kilo-, hecto-, deka-, deci-, centi-, mili-, metric system, triple beam balance, double pan balance, water displacement, meniscus, SI units, mass, weight, volume, density, Bunsen burner | | | | | |
| Resources/Materials | | | | | |
| Life Science text book, www.metricmania.com , teacher-made reproducibles | | | | | |

Name: _____ Week of: _____

| Instructional Strategies/Lesson Sequence | | |
|---|--|---|
| | MONDAY | TUESDAY |
| Access Prior Knowledge (Assessing what students know) | What do the following abbreviations stand for: L, kg, cm, mL, g, m, km, mg, mm, °C | DO NOW – Convert the following measurements using the metric system. (Do Now is hyper-linked – Sarah, print it out and put it on an overhead) |
| Motivation (the hook) | Students will need metric rulers at their desks to complete the packet. | |
| Learning Activities | <ol style="list-style-type: none"> 1. DO NOW – See prior knowledge 2. Students will review the Metric system and its prefixes by completing the “Metric Ladder” 3. Students will then complete several examples of converting within the Metric system. | <ol style="list-style-type: none"> 1. DO NOW – See prior knowledge 2. Homework and Contract will need to be collected and put in shelves. 3. Class will begin the “Measurement Packet” by reading the first page out loud together. 4. Once first page is completed, each student must work independently to complete the packet until the end of the period. |
| Closure | With about 5 mins left in class, students will correct their work along with the teacher. | With about 5 mins left in class, students will correct their work along with the teacher. (choose a few answers from each page to go over – not all answers need to be corrected) |
| Homework | <ol style="list-style-type: none"> 1. Safety Contract (must be signed before any labs are done) 2. Metrics Conversions WS | Measuring Length WS |
| Assessment | Students will have a Metric quiz next week. | Teacher will monitor by asking for student volunteers. DO NOW will be corrected during class. Teacher will call on several students to respond as to how to use the pieces of measurement equipment. |

Name: _____ Week of: _____

| Instructional Strategies/Lesson Sequence | | |
|---|--|-----------------------------------|
| | WEDNESDAY | THURSDAY |
| Access Prior Knowledge (Assessing what students know) | “A” DAY <u>DO NOW</u> – Conversion practice – see overhead | “B” DAY |
| Motivation (the hook) | 80 minute period Hands on lab in which the students rotate from station to station with their lab partner every 6 mins. | |
| Learning Activities | <ol style="list-style-type: none"> DO NOW – See Prior Knowledge (Sarah, print it out and make into an overhead) Students will complete “How Do You Measure Up?” activity by rotating from station to station using the various tools to measure and apply the metric system. Partner will have 6 mins at each station. | Same as Wednesday – 80 min blocks |
| Closure | | |
| Homework | Practicing Measurement Skills WS | |
| Assessment | Students will have a metric lab next week in which they will have to apply these learned skills. | |

Name: _____ Week of: _____

| Instructional Strategies/Lesson Sequence | | |
|---|--|--|
| | FRIDAY | NOTES |
| Access Prior Knowledge (Assessing what students know) | Overhead. | Anticipated Results/Actual Results <ul style="list-style-type: none"> • Where students place the decimal point will be monitored. Calculating the wrong place value is the most common mistake in making conversions throughout the metric system. • Students will be asked to come up with a mnemonic device and to USE it while completing conversion problems. • Students should be reminded to use complete explanations based on SCIENTIFIC FACT while answering open-ended questions. Their answers must be backed with concrete evidence shaped by using the scientific method. • While working in the circuit, students will be reminded to: <ul style="list-style-type: none"> ○ Be patient while using the triple-beam and double-pan balances ○ To always measure liquid volume by the meniscus ○ To always make sure the balances are ZEROED before using. ○ To use an even volume (30mL or 50mL) as a starting point to calculate the volume of an irregular shaped object. |
| Motivation (the hook) | Movie day | |
| Learning Activities | 1. DO NOW – See Access prior knowledge. 2. Students will view a film on the Scientific Method and complete notes that accompany it. | |
| Closure | | |
| Homework | None | |
| Assessment | | |

Administrator's Feedback: Name _____ **Date:** _____

Alignment: Curriculum and Instructional Plan is aligned with curriculum or NJCCCS if curriculum not designed using Understanding By Design as framework.

Rigor: Instruction focuses on discovering the concepts that lies at the heart of the curriculum.

Transfer: Students demonstrate the use of knowledge and skills in new situations

Assessments: Uses the Six Facets of Understanding to measures level of understanding as evidenced through open-ended prompts and challenges that promote the use of knowledge and skills in new, engaging and authentic ways.



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