

# Unit 5 Title: Physical Properties and Changes, Solutions, Gases

Content Area: **Template**

Course(s):

Time Period:

Length:

Status: **Published**

## State Mandated Topics Addressed in this Unit

| <u>State Mandated Topics Addressed in this Unit</u> |     |
|---|-----|
| N/A   | N/A |

## Unit 5 Title: Physical Properties and Changes, Solutions, Gases

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### Essential Questions

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- How can lack of intermolecular forces and kinetic molecular theory explain the unique nature and properties of gases as compared to liquids and solids?
- How does knowledge of the periodic table help to better understand the cause and nature of intermolecular forces?
- How does the polarity of water explain its ability to act as a strong solvent of many solid and liquid solutes?
- What comparisons can be made among solids, liquids and gases in terms of intermolecular forces and physical properties?
- What is the cause of direct and inverse relationships among temperature, pressure, volume, and moles when studying gas samples?
- What types of intermolecular forces exist among particles of matter?
- Why is hydrogen bonding the strongest IMF and why are dispersion forces the weakest IMF?

### Standards

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|--------------|---|
| SCI.HS-PS1-3 | Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.   |
| SCI.HS-PS3-2 | Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative position of particles (objects). |
| SCI.HS-PS3-1 | Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.  |

## **Assessment Procedure**

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- Classroom Total Participation Technique
- Classwork
- DBQ
- Essay
- Exit Ticket/Entrance Ticket/Do Now
- Flashcards and/or drill and practice
- Inquiry based activities with reflective discussion
- Journal / Student Reflection
- Kahoot
- Laboratory groups
- Lecture with note taking or guided notes
- Online models and simulators
- Other named in lesson
- Peer Review
- Performance
- Power point presentation
- Problem Correction
- Project
- Quiz
- Rubric
- Teacher Collected Data
- Test
- Whole and small group discussions
- Worksheet

## **Recommended Technology Activities**

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- Appropriate Content Specific Online Resource
- Chromebook
- Copy/Paste Content Specific Link Here
- Copy/Paste Content Specific Link Here
- Copy/Paste Content Specific Link Here
- Gimkit
- GoGuardian
- Google Classroom
- Google Docs
- Google Forms

- Google Slides
- Kahoot
- MagicSchool AI
- Other- Specified in Lesson
- Quiziz
- Screencastify

## **Accommodations & Modifications & Differentiation**

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Accommodations and Modifications should be used to meet individual needs. Their IEP and 504 plans should be used in addition to the following suggestions.

## **Gifted and Talented**

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- Compare & Contrast
- Conferencing
- Debates
- Jigsaw
- Peer Partner Learning
- Problem Solving
- Structured Controversy
- Think, Pair, Share
- Tutorial Groups

## **Instruction/Materials**

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- alter format of materials (type/highlight, etc.)
- color code materials
- eliminate answers
- extended time
- extended time
- large print
- modified quiz
- modified test
- Modify Assignments as Needed
- Modify/Repeat/Model directions
- necessary assignments only
- Other (specify in plans)

- other- named in lesson
- provide assistance and cues for transitions
- provide daily assignment list
- read class materials orally
- reduce work load
- shorten assignments
- study guide/outline
- utilize multi-sensory modes to reinforce instruction

## **Environment**

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- alter physical room environment
- assign peer tutors/work buddies/note takers
- assign preferential seating
- individualized instruction/small group
- modify student schedule (Describe)
- other- please specify in plans
- provide desktop list/formula

## **Honors Modifications**

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## **Resources**

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- Resource 1
- Resource 2
- Resource 3
- Resource 4
- Resource 5