**Thermal Energy, Heat and the Temperature**

**Study Guide**

**How to use the objectives:**

-answer each as though it were a short answer question

-check HMH Checkpoints and Pre Test for sample questions

-review the vocabulary terms in the question as well as those you used to answer the question

-create a list of vocabulary terms from the sections listed

-practice any math problems or skill activities completed in class

-review your notes early and often

-other study tips on the back

**HMH Energy & Energy Transfer Lessons**

Review of Unit 2 Lesson 1 Exploration 3: Energy Transfer

**Temperature & Heat**

HMH Unit 2 Lesson 2 Exploration 1: Comparing Hot and Cold Objects

HMH Unit 2 Lesson 2 Exploration 2: Relating Temperature and Thermal Energy

HMH Unit 2 Lesson 2 Exploration3: Analyzing Heat

**Thermal Energy Transfer in Systems**

HMH Unit 2 Lesson 3 Exploration 3: Applying Concepts of Heat Transfer

| ***Unit Goals*:**  ***Students will be able to demonstrate that a transfer of energy to or from an object results in a change in the total energy of an object.***  ***Students will be able to explain the relationships between temperature, thermal energy, and heat.***  ***Students will be able to explain how thermal energy is transferred and use this knowledge to assess the efficiency of heat-related technologies.***  What are some examples of energy transfer and energy transformation? Identify "losses" that occur during energy transformations.  What makes some objects feel colder than others at the same temperature?  What is thermal energy? How is thermal energy transferred?  What is temperature? What are the different temperature scales and how do these compare?  What qualities of an object impact the thermal energy of the object?  What is heat? What are the methods of heat transfer?  What is thermal conductivity? How does this influence heat transfer?  What do we mean when we say a technology is 'energy efficient'?  How can we minimize changes in temperature? Why would we need to do this? | |
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* Know the important reference points on the different temperature scales
* Be able to describe and draw the forms of heat transfer

**Questions I need to ask in class:**

**What does it mean to study?**

Studying is an active process- simply rereading your notes or the textbook is not active enough

1. Use the study guide
   1. fill out the study guide using your notes, textbook, handouts, and any quizzes that lead to the test
   2. make a copy of the original study guide. fill out this copy using your memory. Highlight parts you didn't know from memory
   3. practice what you didn't know and finish the second guide. repeat until you can complete a copy of the guide from memory.
   4. make another copy of the original study guide. print it out and cut each question into separate strips. put the strips into a box or basket.
   5. shuffle the box, pick a question and test yourself. if needed, have the answers on the back or on an answer key. ask a peer or adult to quiz you.
2. Try one of the following, something that has worked for you in the past.
   1. rewrite notes
   2. make flashcards of vocabulary words or important concepts
   3. use the study guide tips above
   4. quiz yourself
   5. study with a group- teach someone a topic
   6. do practice questions or practice problems from homework, classwork, or HMH
3. Choose something that works for your learning style

| **See it** | **Hear it** | **Say it** | **Do it** |
| --- | --- | --- | --- |
| charts  photos  timeline  graphs  pictures  website  mind map | watch videos  class discussions  podcasts  different teacher- online videos | teach a peer  study in groups  review sessions | giant sticky notes  create a textbook page about the topic  flash cards  songs  study guides  make your own test  use textbook/hw questions |