Compact Disks Module  
(Grades 6-8)

What are the essential questions for this module?

- What are CDs?
- What are CDs made of?
- How is a CD read?
- How do CDs work?
- How are CDs created?
- Can CDs be damaged?

What central concepts are discussed?
Compact Disks, Reflection, Lasers, Binary code, Morse Code

What National Science Education Standards are addressed?

- *Science as Inquiry. Content Standard A.*  
  Abilities necessary to do scientific inquiry  
  Understandings about scientific inquiry  
- *Science and Technology. Content Standard E.*  
  Abilities of Technological Design  
  Understanding about Science and Technology  
- *Science in Personal and Social Perspectives. Content Standard F.*  
  Science and Technology in Society

What do students need to know to work with this module?

**Understandings**

- There are different lasers for different things

**Skills**

- Familiarity with the use of computers and the internet  
- Basic reading skills  
- Correct use of a protractor to measure angles in degrees  
- Basic understanding of codes (know the definitions of Morse code and Binary Code)  
- Ability to use a dictionary
<table>
<thead>
<tr>
<th>WHAT WILL STUDENTS UNDERSTAND AS A RESULT OF THEIR WORK WITH THIS MODULE?</th>
<th>HOW WILL STUDENTS COME TO THIS UNDERSTANDING? They will</th>
<th>HOW WILL STUDENTS DEMONSTRATE THIS UNDERSTANDING? They will</th>
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</thead>
<tbody>
<tr>
<td>Compact Disks (CDs) are used to store information.</td>
<td>• Complete a sequence of exploratory activities. • Read and analyze information.</td>
<td>• Design using a simulation on Morse code and Binary code.</td>
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<tr>
<td>Compact Disks (CDs) are made of four layers.</td>
<td>• Complete a sequence of exploratory activities. • Read and analyze information</td>
<td>• Design using a simulation putting the layers of a CD together.</td>
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<tr>
<td>Compact Disks (CDs) are read using a laser. The laser hits a pit or a land and the information is sent back to tell the CD which part to read.</td>
<td>• Complete a sequence of exploratory activities. • Read and analyze information.</td>
<td>• Design using a simulation shining a laser or a light onto a CD.</td>
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<tr>
<td>Compact Disks (CDs) are mass-produced using a mold.</td>
<td>• Complete a sequence of exploratory activities. • Read and analyze information</td>
<td>• Predict outcomes. • Design using a simulation to create a mold and then make a product.</td>
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<tr>
<td>Compact Disks (CDs) can be damaged</td>
<td>• Complete a sequence of exploratory activities. • Read and analyze information.</td>
<td>• Design using a simulation to look at CDs with different type of damage, using a laser or a light.</td>
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