Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_

***Can You Cut It? Slicing Three-Dimensional Figures***

Lesson Activity

1. ***The Cube***

* Using modeling clay or play-doh, each student creates a model of a cube.
* With your group, predict the type of shapes you could see by cutting the cube at different places and different angles. Do not actually make any cuts, but envision what they would look like and write your predictions below:

| Description of “slice” made: | Prediction of shape formed (cross-section): |
| --- | --- |
| 1. | **1.** |
| 2. | **2.** |
| 3. | **3.** |
| 4. | **4.** |
| 5. | **5.** |

* Using a plastic knife or dental floss, slice through the middle of the model cube in a direction perpendicular to the base.

| To the right, sketch, describe, and name the figure formed by the cross-section. | Figure Name:  |
| --- | --- |

| If the slice was made in a different area (but still perpendicular to the base), would the shape of the cross-section be the same or different? Explain your thinking in the box to the right.  | SameDifferent |
| --- | --- |

* Put your model back together again before continuing.
* Slice through the middle of the model cube in a direction parallel to the base.

| To the right, sketch, describe, and name the figure formed by the cross-section. | Figure Name:  |
| --- | --- |

| If the slice was made in a different area (but still parallel to the base), would the shape of the cross-section be the same or different? Explain your thinking in the box to the right. | SameDifferent |
| --- | --- |

2. **Rectangular Prisms**

* Using modeling clay or play-doh, create a right rectangular prism that is not a cube. **The bases of the prism are squares and the lateral faces are rectangles.**
* With your group, predict the type of shapes you could see by cutting the prism at different places and different angles. Do not actually make any cuts, but envision what they would look like and write your predictions below:

| Description of “slice” made: | Prediction of shape formed (cross-section): |
| --- | --- |
| 1. | **1.** |
| 2. | **2.** |
| 3. | **3.** |
| 4. | **4.** |
| 5. | **5.** |

* Using a plastic knife or dental floss, slice through the middle of the model prism in a direction that is perpendicular to the base (and parallel to the faces).

| To the right, sketch, describe, and name the figure formed by the cross-section.  | Figure Name: |
| --- | --- |

| If the slice was made in a different area (but still perpendicular to the base), would the shape of the cross-section be the same or different? Explain your thinking in the box to the right.  | SameDifferent |
| --- | --- |

* Put your model back together again before continuing.
* Slice through the middle of the model prism in a direction parallel to the base.

| To the right, sketch, describe, and name the figure formed by the cross-section. | Figure Name: |
| --- | --- |

3. ***Right Rectangular Pyramids***

* Using modeling clay or play-doh, create a right rectangular pyramid**.**
* With your group, predict the type of shapes you could see by cutting the pyramid at different places and different angles. Do not actually make any cuts, but envision what they would look like and write your predictions below:

| Description of “slice” made: | Prediction of shape formed (cross-section): |
| --- | --- |
| 1. | **1.** |
| 2. | **2.** |
| 3. | **3.** |
| 4. | **4.** |
| 5. | **5.** |

* Using a plastic knife or dental floss, slice through the middle of the model pyramid in a direction that is perpendicular to the base (and slices through the vertex).

| To the right, sketch, describe, and name the figure formed by the cross-section. | Figure Name: |
| --- | --- |

| If the slice was made in a different area (but still perpendicular to the base), would the shape of the cross-section be the same or different? Explain your thinking in the box to the right.  | SameDifferent |
| --- | --- |

* Put your model pyramid back together again before continuing.
* Slice through the middle of the model pyramid in a direction parallel to the base.

| To the right, sketch, describe, and name the figure formed by the cross-section. | Figure Name: |
| --- | --- |

| If the slice was made in a different area (but still parallel to the base), would the shape of the cross-section be the same or different? Explain your thinking in the box to the right.  | SameDifferent |
| --- | --- |