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| **How Many Sections- 6.EE.1** | |
| **Domain** | **Expressions and Equations** |
| **Cluster** | **Apply and extend previous understandings of numbers to the system of rational numbers.** |
| **Standard(s)** | **6.EE.1** Write and evaluate numerical expressions involving whole-number exponents. |
| **Materials** | Activity sheet, Scrap paper to fold (optional) |
| **Task** | **How Many Sections**  Part 1:  Susan and Jose are trying to predict the number of equal sections that they are creating by folding paper repeatedly in half.  After 1 fold there are 2 sections.  After 2 folds, they see 4 sections.  After 3 folds, they see 8 sections.  How many sections will there be when there are 4 folds? 5 folds? 6 folds?  Part 2:  Write expressions with exponents to find the number of sections for each of the answers in Part 1.  Part 3:  Write an explanation about the expression that you wrote for Part 2. |

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| **Rubric** | | |
| **Level I** | 1. **Level II** | **Level III** |
| Developing Proficiency   * Student uses inappropriate solution strategy and does not get the correct answer. | Not Yet Proficient   * There are one or two errors. | Proficient in Performance   * Accurately solves problem * Part 1: 4 folds: 16 sections, 5 folds: 32 sections, 6 folds: 64 sections. * Part 2: In order to find the number of sections, 2n where n is the number of folds. For example, 4 folds: 24=16;   5 folds: 25=32.   * Part 3: The explanation is clear and accurate. |

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| **Standards for Mathematical Practice** |
| **1. Makes sense and perseveres in solving problems.** |
| **2. Reasons abstractly and quantitatively.** |
| 3. Constructs viable arguments and critiques the reasoning of others. |
| **4. Models with mathematics.** |
| 5. Uses appropriate tools strategically. |
| **6. Attends to precision.** |
| 7. Looks for and makes use of structure. |
| 8. Looks for and expresses regularity in repeated reasoning. |

**How Many Sections**

Part 1:

Susan and Jose are trying to predict the number of equal sections that they are creating by folding paper repeatedly in half.

After 1 fold there are 2 sections.

After 2 folds, they see 4 sections.

After 3 folds, they see 8 sections.

How many sections will there be when there are 4 folds? 5 folds? 6 folds?

Part 2:

Write expressions with exponents to find the number of sections for each of the answers in Part 1.

Part 3:

Write an explanation about the expression that you wrote for Part 2.