Investigating Prisms

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

1. Take three minutes with the cubes. Put them together, show me your coolest creation.
2. Create a prism, write down its dimensions:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Build the first three prisms in the table below.
4. Fill in the blanks.
5. Try your own prisms, make sure you can double check your answer with your partner.
6. See if you can find short cuts (rather than straight counting).

|  |  |  |  |
| --- | --- | --- | --- |
| Prism | Dimensions | Number of cubes  | Number of outside squares |
| 1 | $$1units×1units×1units$$ |  |  |
| 2 | $$1units×1units×2units$$ |  |  |
| 3 | $$1units×2units×3units$$ |  |  |
| 4 | $$2units×2units×3units$$ |  |  |
| 5 |  |  |  |
| 6 |  |  |  |
| 7 |  |  |  |
| 8 |  |  |  |
| 9 |  |  |  |
| 10 | $$2units×3units×4units$$ |  |  |
| 11 | $$2units×2units×2units$$ |  |  |
| 12 | $$4units×3units×5units$$ |  |  |

Did you find any short cuts for determining the number of cubes? What was it?

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Did you find any short cuts for determining the number of outside squares? What was it?

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*Try to solve these larger more difficult prisms. Can you make these with cubes?*

*(Grab a spare piece of paper for the work that you can put in with your notes)*

|  |  |  |  |
| --- | --- | --- | --- |
| Prism | Dimensions | Number of cubes necessary | Number of outside squares |
| 1 | $$5units×5units×10units$$ |  |  |
| 2 | $$5units×6units×10units$$ |  |  |
| 3 | $$7units×7units×7units$$ |  |  |
| 4 | $$5units×10units×10units$$ |  |  |
| 5 | $$6units×9units×10units$$ |  |  |
| 6 | $$11units×12units×13units$$ |  |  |
| 7 | $$15units×20units×20units$$ |  |  |
| 8 | $$5units×30units×20units$$ |  |  |