Nets and Surface Area Worksheet

Grade 6 · Common Core 6.G.A.4

> Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

Practice

Builds the skill step by step.

1. Find the surface area of a cube with edges of 3 cm.

2. How many faces does the net of a rectangular prism have?

   A. 4

   B. 5

   C. 8

   D. 6

3. Find the surface area of a rectangular prism that is 4 in by 3 in by 2 in.

4. A net has 2 triangles and 3 rectangles. What solid does it make?

   A. A rectangular prism

   B. A triangular prism

   C. A square pyramid

   D. A cube

5. Find the surface area of a cube with edges of 5 ft.

6. A net has 1 square and 4 identical triangles. What solid does it make?

   A. A triangular prism

   B. A cube

   C. A triangular pyramid

   D. A square pyramid

7. A rectangular prism is 5 m by 2 m by 1 m. What is the area of its largest face?

8. Find the surface area of a rectangular prism that is 6 cm by 2 cm by 2 cm.

9. How many faces does the net of a square pyramid have?

10. Find the surface area of a cube with edges of 1 meter.

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On Level

Grade-level practice.

1. A square pyramid has a base of 6 in by 6 in. Each triangular face has a base of 6 in and a height of 5 in. Find the surface area.

2. Find the surface area of a rectangular prism 10 ft by 4 ft by 3 ft.

3. A triangular prism has two right-triangle bases with legs of 3 cm and 4 cm and a longest side of 5 cm. The prism is 10 cm long. Find its surface area.

4. A box with no top is 8 in by 5 in by 4 in tall. How much cardboard is needed to make it?

   A. $144\ \text{in}^2$

   B. $184\ \text{in}^2$

   C. $160\ \text{in}^2$

   D. $104\ \text{in}^2$

5. Find the surface area of a cube with edges of $\frac{1}{2}$ ft.

6. A rectangular prism is 2.5 m by 2 m by 4 m. Find its surface area.

7. A gift box is 12 in by 8 in by 3 in. How much wrapping paper covers it exactly, with no overlap?

8. A net of a cube is made of 6 squares, each 16 cm^2. How long is each edge of the cube?

   A. 4 cm

   B. 16 cm

   C. 8 cm

   D. 96 cm

9. A triangular pyramid has 4 identical triangle faces, each with a base of 8 cm and a height of 7 cm. Find its surface area.

10. A cereal box is 8 in by 2 in by 12 in. Find its surface area.

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Challenge

Multi-step and word problems that stretch it.

1. A cube has a surface area of 294 square inches. How long is each edge?

2. A tent is a triangular prism. Each triangle end has a base of 6 ft and a height of 4 ft, and the slanted sides are 5 ft. The tent is 8 ft long and has a floor. How much fabric is needed?

3. Paint covers 350 square feet per gallon. A shed (ignore the floor) is a rectangular prism 10 ft by 8 ft by 7 ft. How many gallons are needed to paint the walls and roof? Round up to a whole gallon.

4. If every edge of a cube is doubled, what happens to its surface area?

   A. It doubles.

   B. It is multiplied by 4.

   C. It is multiplied by 8.

   D. It is multiplied by 6.

5. Two boxes have the same volume of 24 cubic inches: Box A is 4 by 3 by 2, and Box B is 6 by 2 by 2. Which uses less cardboard, and by how much?

6. Mia found the surface area of a 5 by 4 by 3 prism as $5 \times 4 \times 3 = 60$. What mistake did she make, and what is the correct surface area?

7. A square pyramid has a surface area of 85 square cm. Its base is 5 cm by 5 cm. What is the area of each triangular face?

8. A rectangular prism's net has faces of 12 cm^2, 12 cm^2, 20 cm^2, 20 cm^2, 15 cm^2 and 15 cm^2. What are the prism's dimensions?

9. Wrapping paper costs $0.02 per square inch. How much does it cost to cover a box 10 in by 6 in by 4 in?

10. A stack of two identical cubes, each with 2-inch edges, forms a rectangular prism. What is the surface area of the stack?