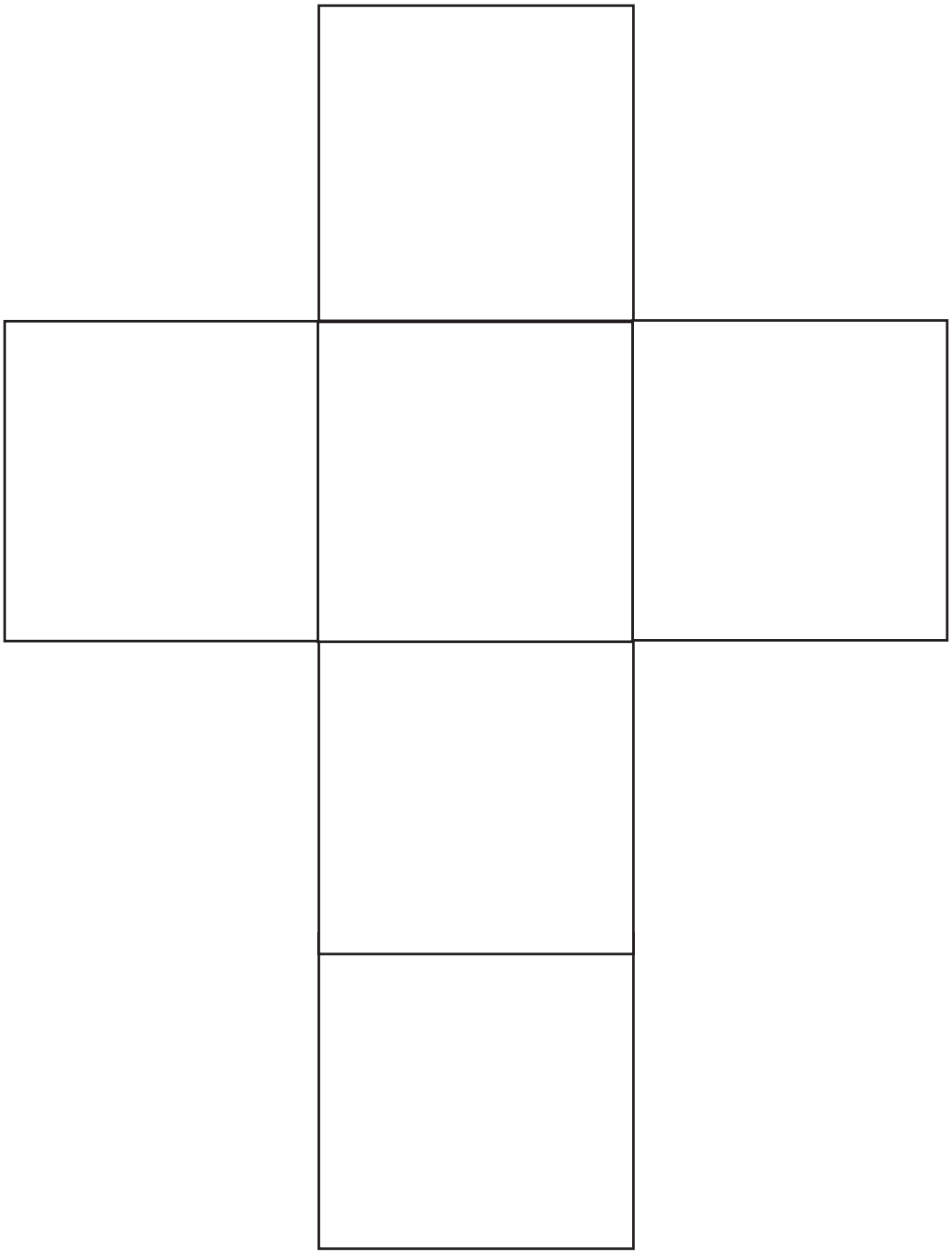
Cube

Cut around the outline of the shape below. Fold to make a cube.

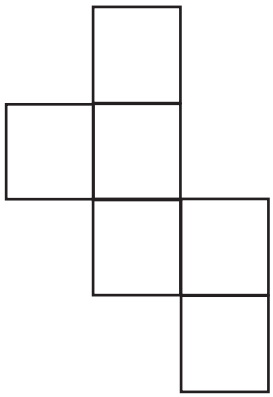
Cube



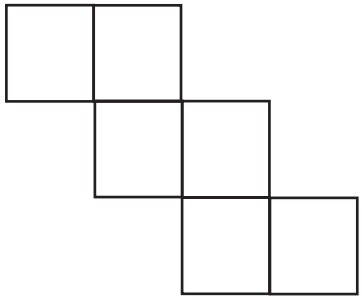
Does it make a cube?

Glance at these nets and guess if they will fold into a cube.

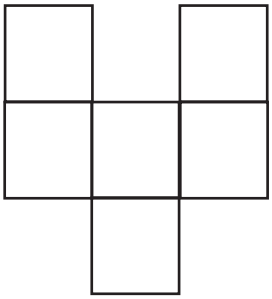
Will this net fold into a cube?
Yes No



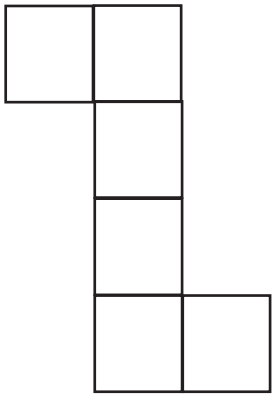
Will this net fold into a cube?
Yes No



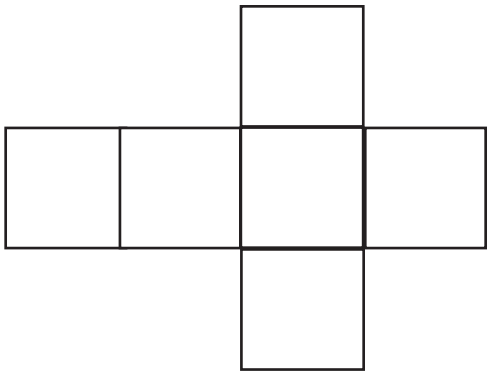
Will this net fold into a cube?
Yes No

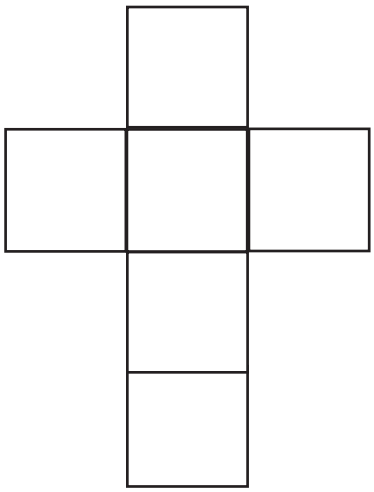


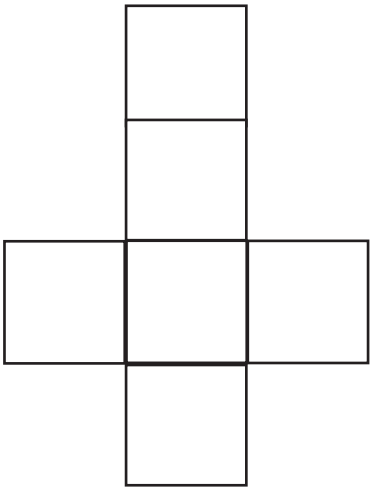
Will this net fold into a cube?
Yes No

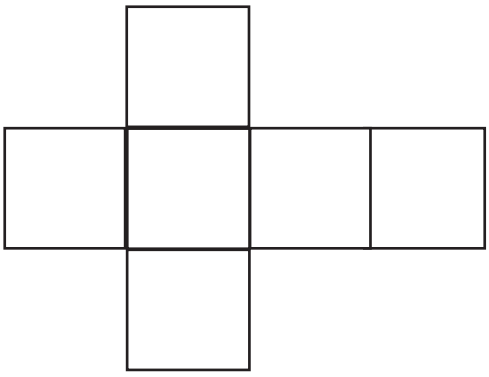


How are these the same?
How are these different?





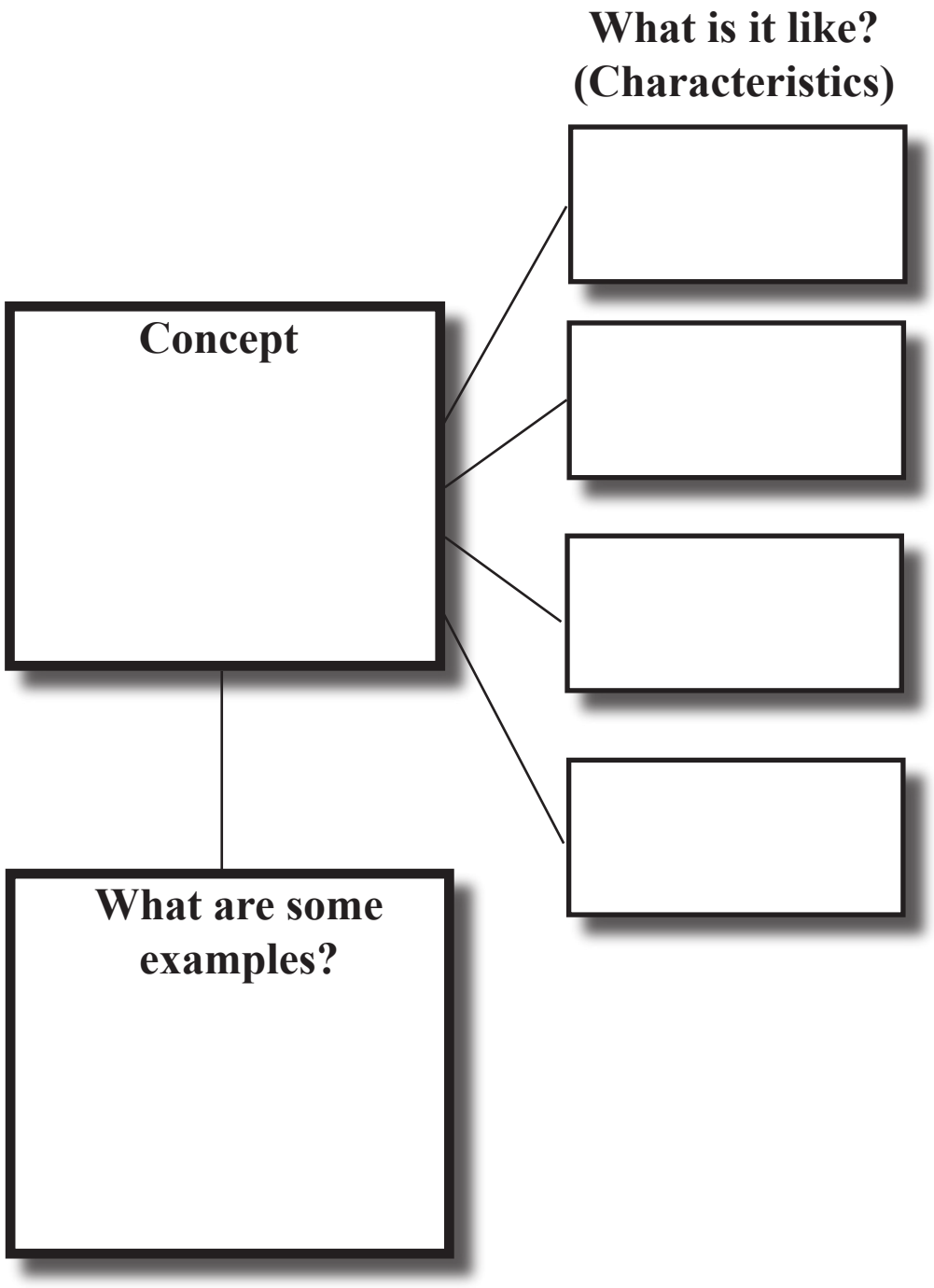




Grid Paper for Nets

As you find the nets, cut them out from the grid paper, put your name on them, and number them.

Concept Definition Map



Career Opportunities

WHAT CAN I DO WITH A PACKAGING DEGREE?

Package engineers create, design and manage a package development process that is vital to the society in which we live. Package engineers are employed by:

Raw material manufacturers: produce plastics, paper, metals and glass
Package converters: form packages out of raw materials
Package machine manufactureres: design machines to make and fill packages
End-user companies: design and select the most effective packages for their products

WHERE CAN I GET A PACKAGING TECHNOLOGY DEGREE?

California Polytecnic State Institue (Cal Poly)
Clemson University
Indian Institute of Packaging
Indiana State University
Michigan State University
Purdue University
Rochester Institute of Technology
Rutgers - The State University of New Jersey
San Jose State University
University of Florida
University of Illinois
University of Massachusettes
University of Missouri - Rolla
University of Wisconsin - Stout
U.S. Army Ordinance Center and School
Virginia Polytechnic Institute

WHAT COMPANIES HIRE PEOPLE WITH PACKAGING TRAINING?

SAMPLES OF COMPANIES INCLUDE:

Blue Ribbon Packaging Systems, Inc.
Bosch Packaging machinery
Bostik Findley
Creative Packaging, Corp.
Doven Medipham Ltd.
Eastman Chemical Co.
Evalca A Kurary Co.
FMC FoodTech
Impaxx Label-Aire, Trine Labeling
Markem Corp.
Nercon
Optima Machinery Corp.
Pacity
Salwasser, SWF Co.
Tap Tone
T.H.E.M.

MAGAZINES ON PACKAGING

Food and Drug Packaging
Brand Packaging
Flexible Packaging
The Journal for Packaging Professionals

NCTM Geometry/Representation Standards

Geometry

Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships

Specify location and describe spatial relationships using coordinate geometry (graphing) and other representational systems (examples: navigation longitude and latitude, polar coordinates)

Apply transformations (flips and rotations) and use symmetry to analyze mathematical situations

Use visualization (seeing in your mind), spatial reasoning, and geometric modeling to solve problems

Representation

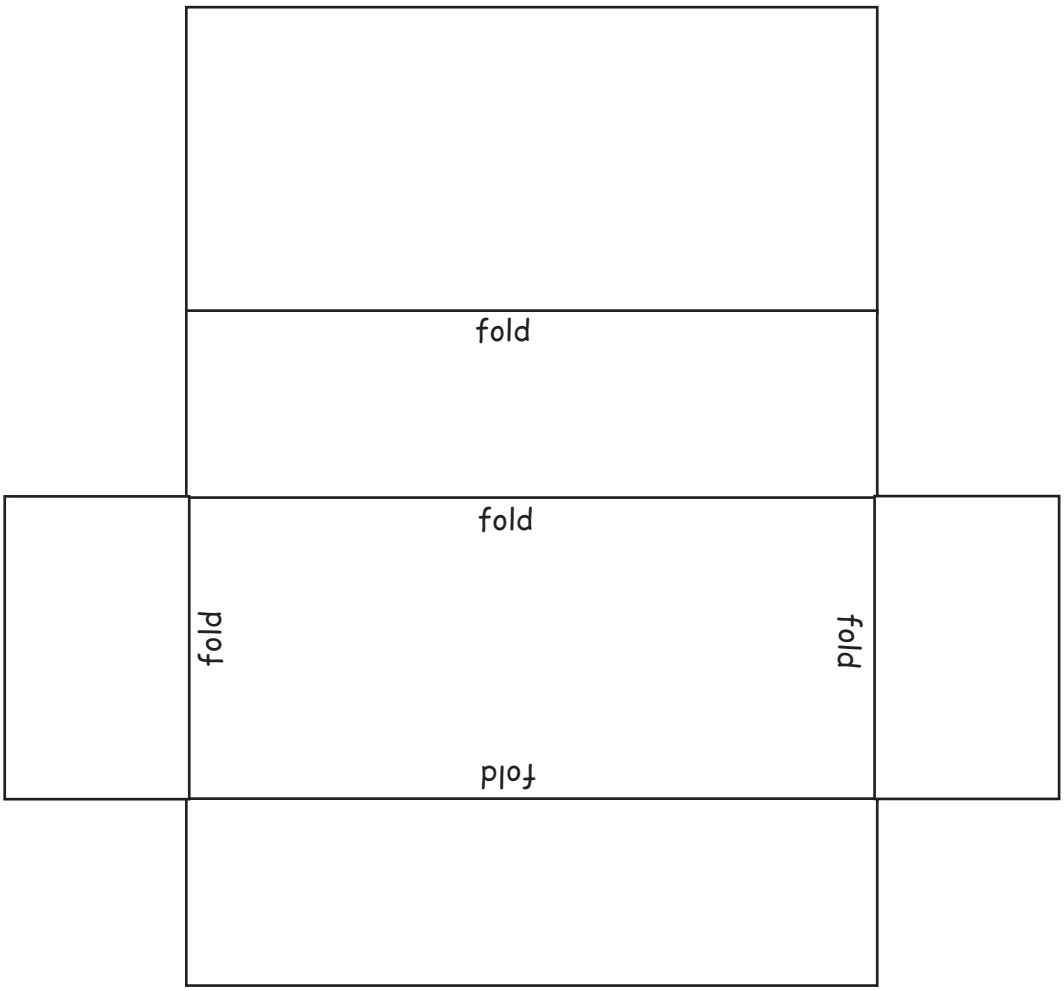
Create and use representations (models, graphs) to organize, record, and communicate mathematical ideas

Select, apply and translate among mathematical representations (example: connect a graph with its equation) to solve problems

Use representations to model and interpret physical, social, and mathematical phenomena (example: graph, diagram)

Nets for Home

Cut out the Rectangular Prism.
Fold on the fold lines to make a 3-dimensional shape.
Tape edges to hold together.

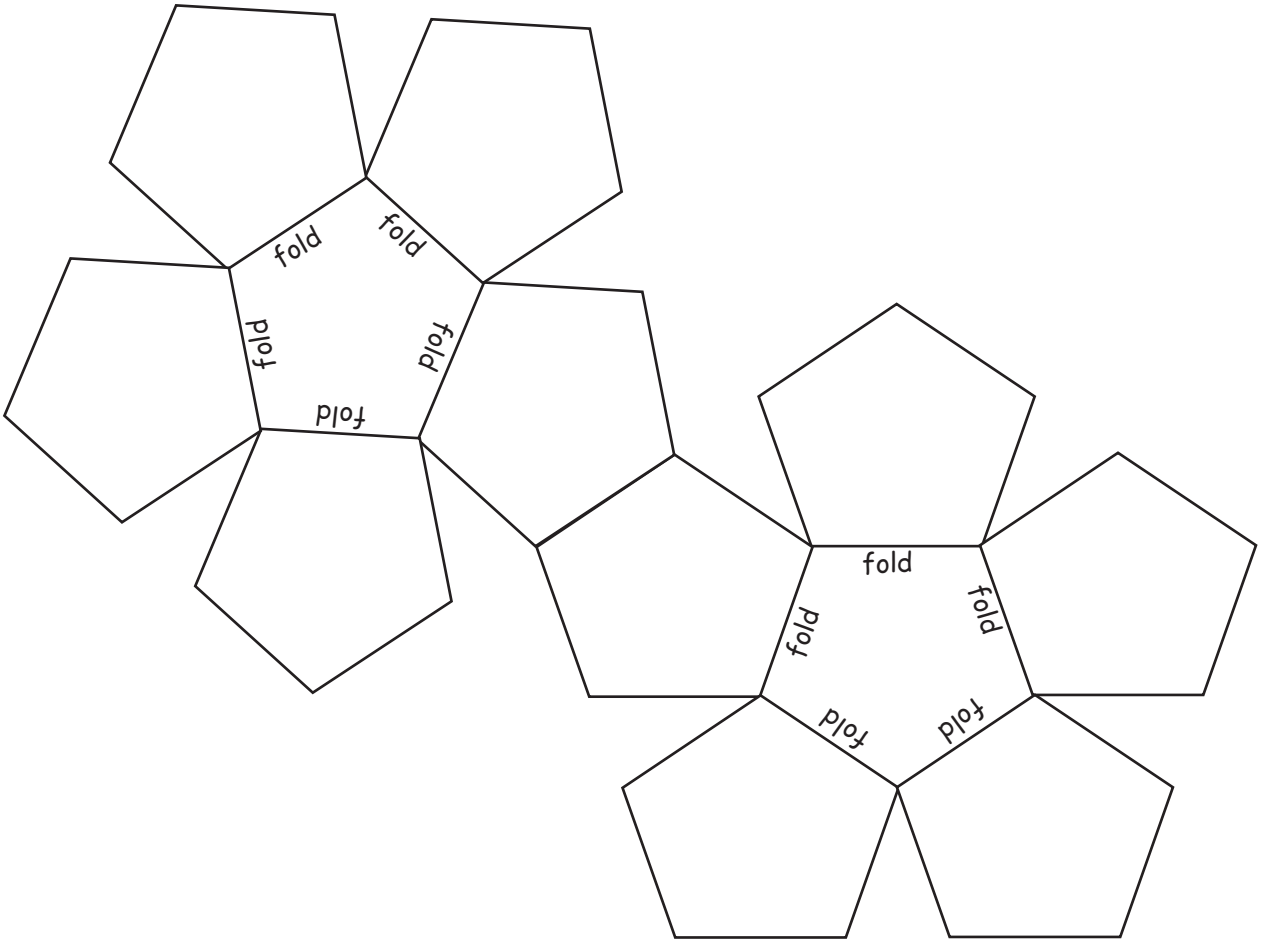


Nets for Home

Cut out the Regular Dodecahedron.
Fold it into a 3-dimensional shape.

Instructions:

a) Start by gluing this sheet onto a piece of thin cardboard or cardstock.
b) Cut out around the perimeter.
c) Lightly score along the fold lines.
d) Close up the shape and hold it closed with a small rubber band.
e) When completed, the figure can be flattened by squeezing on the words "fold" When it is released again, it will pop back into a dodecahedron.



Applications for Home

NOTICE PACKAGING AROUND YOU

What has changed since you were younger? What remained the same, and why?
Ideas to think about:

- waxed paper to ziplock bags
- milk (glass) bottle to carton
- movement away from glass containers to cans, pouches, and sacks

Let your imagination run with you and think about repackaging things in your daily life. How would you improve upon the packaging?

NETS

Explore the nets of objects around your home. Tear the empty package apart to discover the nets.

- cereal boxes (usually rectangles of 3 sizes)
- Pringles containers (rectangle and 2 circles)
- tea bag wrappers
- frozen orange juice cans

Try other unusual shapes:

- drink pouches
- french fry boxes at fast food stores
- popcorn containers at theaters

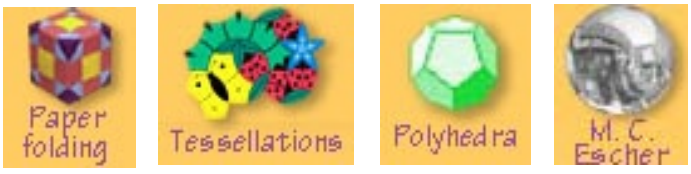
INTERNET SITES TO EXPLORE

Career Information for Parents: http://stats.bls.gov/k12/html/edu_over.htm

This resource is from the Bureau of Labor Statistics and it helps you to explore careers with your child / children.

Math, Art, and Fun: http://www.mathartfun.com

Where math, art, and fun come together to spark creative learning! A store, gallery, and resources for tessellations, polyhedra, Escher, and more.



List of Terms

What does it mean?

Cube: A closed 3-dimensional object which has six square faces

Edge: Line where two faces meet

Face: Side of a 3-dimensional geometric object

Net: A pattern; a flat drawing that can be folded into a 3-dimensional object

Representation: Some examples are: models, graphs, organized charts, and equations

Spatial: Relating to 3-dimensions

Vertex: (for a 3-dimensional object) Point where edges meet

Visualization: Seeing in your mind

Rotate: To turn a figure (around a point)

Reflect: To flip a figure; to create a mirror image of an object (on the opposite side on a line)