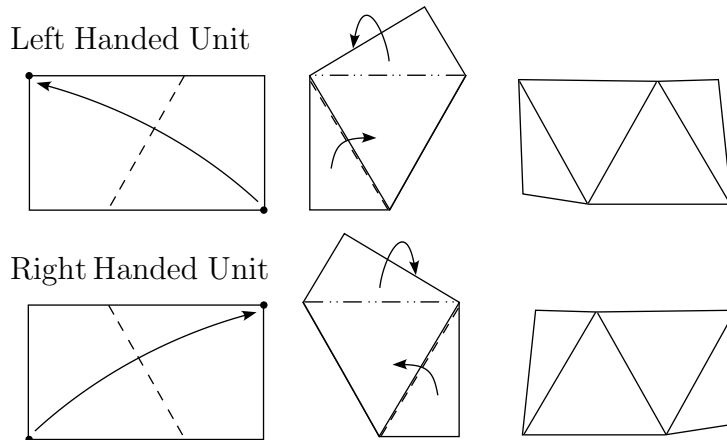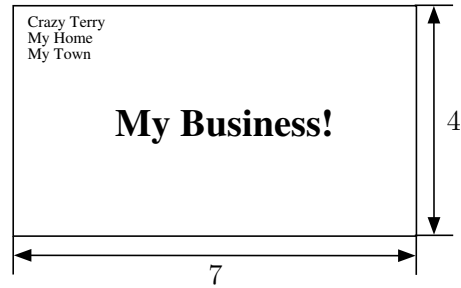# Business Card Polyhedra

Business cards are a very popular medium in **modular origami**, where pieces of paper are folded into **units** and then combined, without tape or glue, to make various shapes. Standard business cards are 2 inch × 3.5 inch rectangles, or 4 × 7 in dimension.

Below are instructions for making a very simple unit from business cards that can make many different polyhedra. This unit was originally invented by Jeannine Mosely and Kenneth Kawamura.
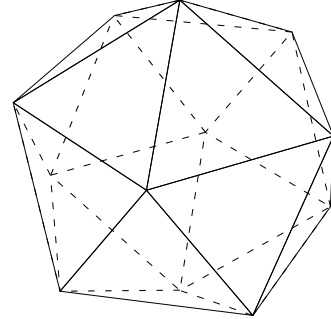

Left Handed Unit

Right Handed Unit

Question 1: Notice that these simple folds on a business card give us, it seems, equilateral triangles. Are that **really** equilateral? How can we tell?

Task 1: Make one left and one right-handed unit and find a way to lock them together to make a **tetrahedron** (shown below left). After you do that, use 4 units to make an **octahedron** (shown below right). We're not telling you how many left and right units you need–you figure it out!
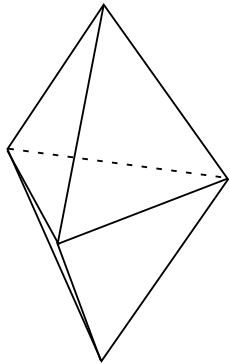
Task 2: Now make 10 units (5 left and 5 right) and make an **icosahedron** with them. An icosahedron has 20 triangle faces. (See the below figure.) Putting this together is quite hard–an extra pair of hands might help.
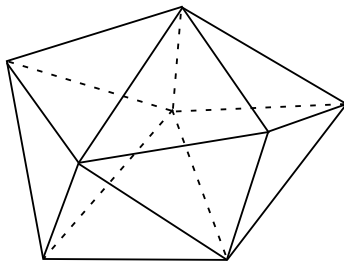

Task 3: What other polyhedra can you make with this unit? Hint: there are lots more. Try making something using only 6 units. How about 8 units? Try to describe the polyhedra you discover in words.

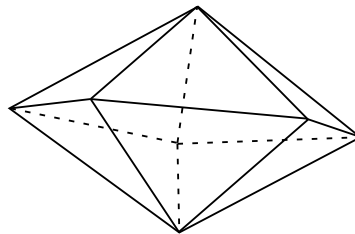# Handout: Johnson Solids with Triangle Faces

Try making these strange polyhedra using the business card unit. You'll have to figure out how many units you'll need and whether they should be left- or right-handed, or a combination of both!
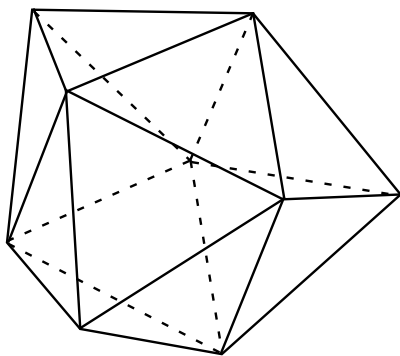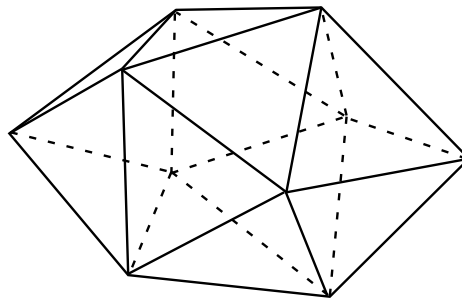
triangular dipyramid **snub disphenoid** **pentagonal dipyramid**

triaugmented triangular prism

gyroelongated square dipyramid