FEARFUL SYMMETRY CUB SCOUT NOVA AWARD

Additional requirement sheets and helps are available from ScouterMom.com.

The Tyger By William Blake
“Tyger Tyger, burning bright,In the forests of the night;What immortal hand or eye,Could frame thy fearful symmetry?”
This module is designed to help you explore how symmetry affects your life each day.

1.Choose A or B or C and complete ALL the requirements.

1A. Watch an episode or episodes (about one hour total) of a show that involves symmetry, mirrors, or artistic patterns. Then do the following:

1A-1. Make a list of at least two questions or ideas from what you watched.

1A-2. Discuss two of the questions or ideas with your counselor.

1B. Read (about one hour total) about anything that involves symmetry, mirrors, or artistic patterns. Then do the following:

1B-1. Make a list of at least two questions or ideas from what you read.

1B-2. Discuss two of the questions or ideas with your counselor.

1C. Do a combination of reading and watching (about one hour total) about anything that involves symmetry, mirrors, or artistic patterns. Then do the following:

1C-1. Make a list of at least two questions or ideas from what you read and watched.

1C-2. Discuss two of the questions or ideas with your counselor.

2.Complete ONE adventure from the following list, or complete option A or B. (If you choose an adventure, choose one that you have not previously earned.) Discuss with your counselor what kind of science, technology, engineering, or math was used in the adventure.

Adventure 1 - Air of the Wolf (Wolf)

Adventure 2- Code of the Wolf (Wolf)

Adventure 3 - Motor Away (Wolf)

Adventure 4 - Forensics (Bear)

Adventure 5 - Marble Madness (Bear)

Adventure 6 - Art Explosion (Webelos)

Adventure 7 - Build It (Webelos)

Adventure 8 - Maestro! (Webelos)

2 - Option A: Complete all of the following:

2A-1: Explain the difference between the symmetry of the flower of a geranium and the symmetry of the flower of herbaceous periwinkle.

2A-2. Explain the difference in leaf arrangement (the pattern of where leaves appear on the stem) between a maple tree and a sweetgum tree.

2A-3. Find another pair of plants that you can distinguish based on some difference in symmetry.

2 - Option B: Complete all of the following:

2A-1. Using toothpicks and colored marshmallows, or other appropriate materials, make a model of the crystal structure of olivine.

2A-2. Using toothpicks and colored marshmallows, or other appropriate materials, make a model of the crystal structure of halite.

2A-3. Use your models to guess which of the two minerals is harder.

3.Choose TWO options from A or B or C or D or E , and complete ALL the requirements for the options you choose.

3A. Make a paper lantern.

3A-1. Fold a large piece of paper in quarters lengthwise.

3A-2. Cut decorative or symbolic shapes into the two folded edges.

3A-3. Unfold, tape the two edges of the paper together, and smooth into a cylinder. Hang by a string.

3B. Learn about the kolam artwork of southern India.

3B-1. Look at some pictures of kolams. Find as many similarities as possible within each kolam. Is there a repeated pattern?If you turn it a little,do you get the same picture? If you look at it in a mirror,do you get the same picture?

3B-2. Use sand, chalk dust, flour, or some other material to make a kolam of your own

3C. Learn about the litema wall decorations from Lesotho and South Africa.

3C-1. Look at some pictures of litema. What does one basic tile look like? In how many ways can you see that tile arranged (turned a different direction, flipped backward, etc.)

3C-2. Use clay, paper, or some other material to make a litema of your own.

3D. Learn about the design of Navajo rugs.

3D-1 Look at some pictures of Navajo rugs. Find as many similarities as possible within each rug. Is there a repeated pattern? Is there a mirror image? How many?

3D-2 Using different colors of paper, or other materials, make your own Navajo-like rug.

3E. Learn about Seminole or Miccosukee patchwork designs.

3E-1. Look at some pictures of Seminole or Miccosukee patchwork. Find as many similarities as possible within each piece. What does a basic block of each pattern look like? How many different basic blocks are used in the design?

3E-2. Using different colors of paper, or other materials, make your own Seminole-like patchwork.

4.Visit a place where symmetry is important (such as an art exhibit, building site, or printer) or visit with a person who works with symmetry (such as an artist, interior designer, or landscape architect). Discuss with your counselor the symmetry or ideas of balance involved.

5.Discuss with your counselor how symmetry impacts your everyday life.