PRECIPITATION

W E

Fuel Loading
Amount

Fuel Type
SHRUB

OXYGEN

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Fuel Size and Shape
Heavy or Light

Fuel Size and Shape
Heavy or Light

RELATIVE HUMIDITY

R i

FUEL

Fuel Type
SLASH

HEAT

WEATHER

Fuel Type
GRASS

TOPOGRAPHY

Fuel Arrangement

Continuous

AERIAL
SURFACE
GROUND

Patchy HORIZONTAL CONTINUITY

A T

WIND

FUEL CHARACTERISTICS

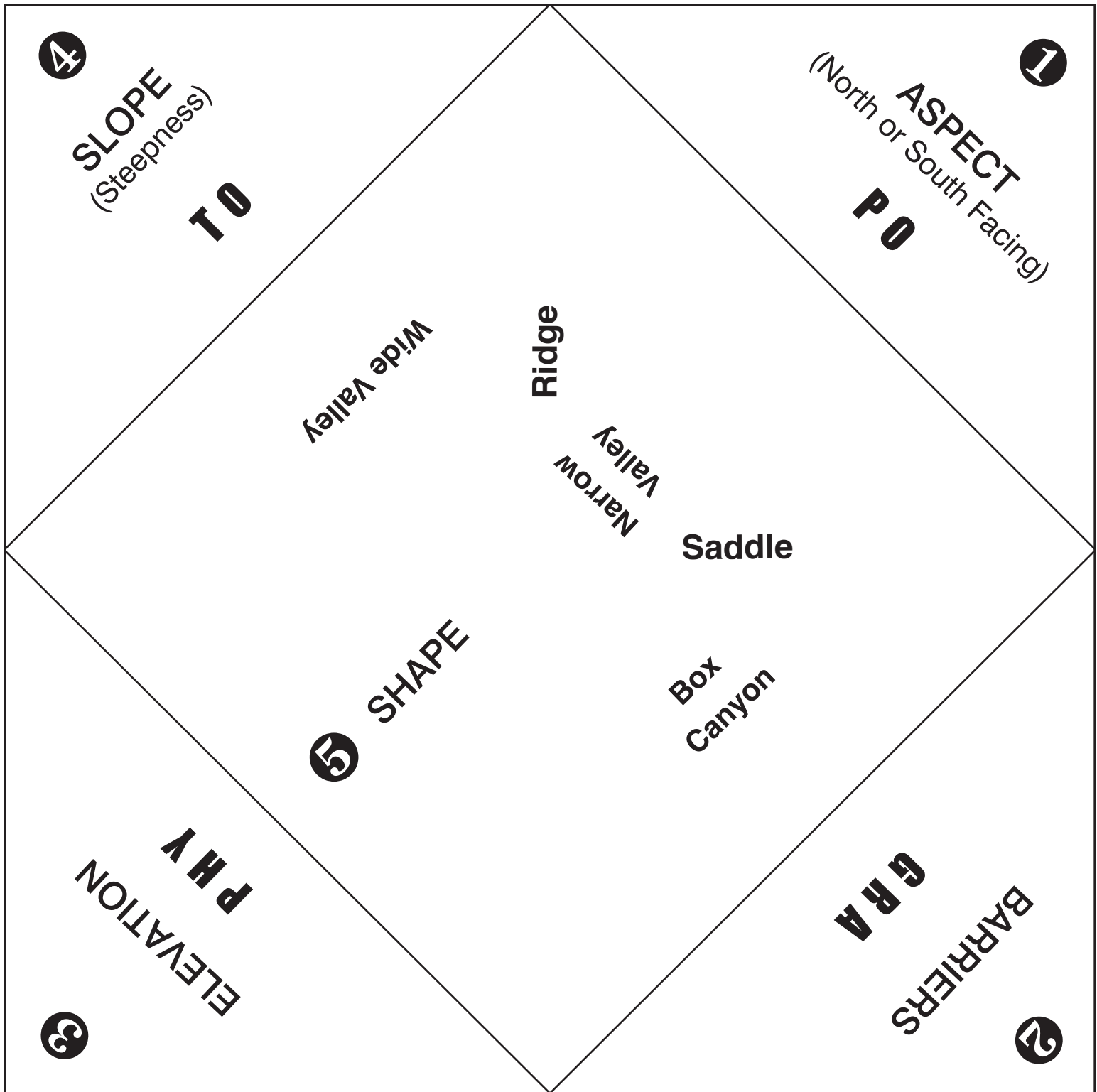Fuel Type
TIMBER

H E

Fuel Moisture

TEMPERATURE

The Geometry of Fire: Triangles, Squares, Lines!

3-D Fire Triangle Folding Instructions

1. Cut off "Instructions" strip.

2. Fold the paper in fourths. Unfold.

3. Place "Heat/Weather" side DOWN on flat surface.

4. Fold corners UP and IN to meet in the middle. (Position 1)

5. Turn this folded paper over. Fold the corners of this smaller square IN and UP to meet in the middle.

6. Fold entire model in fourths, to create creases, keeping weather features (wind, temperature, etc) on the outside.

7. Unfold the quarter folds. (Position 2)

4 SLOPE (Steepness)

T 0

1 ASPECT (North or South Facing)

P O

Wide Valley

Ridge

Narrow Valley

Saddle

SHAPE

5

Box Canyon

P H Y ELEVATION

3

BARRIERS

G R A

2

Use of 3-D Fire Triangle to teach Fire Behavior

1. Start in Position 1. Fold the square in half diagonally, with the words HEAT, OXYGEN and FUEL on one side.
   This is the standard Fire Triangle; without all three of these components, fire cannot occur. Fire suppression occurs when any one is removed.
2. On the other side of this triangle is the Fire Behavior Triangle. These things (WEATHER, TOPOGRAPHY AND FUEL CHARACTERISTICS)
   determine the way a fire burns. We will learn more about each of them using the folded paper.
3. Fold the paper into the shape created in Position 2.
4. Slide thumb and fore fingers of both hands under and into opposite outer flaps (with weather features on the outside).
5. Pinch all points together, noticing the word WEATHER written on the tips. On each flap is written one of the weather conditions that influence fire
   behavior (Temperature, Precipitation, Fuel Moisture, and Wind).
6. Open and close thumbs and fingers to see the vegetation features that affect fire behavior. Holding your thumb and fingers one way shows four fuel
   types that influence fire behavior (GRASS, SLASH, SHRUB, TIMBER). Holding your thumb and fingers the other way shows the other four vegetation
   characteristics. (FUEL LOADING, FUEL MOISTURE, FUEL ARRANGEMENT, FUEL SIZE)
7. Take your fingers out and turn the model upside down.
8. Looking inside at the words TOPOGRAPHY inside the points.
9. Find the five topographic features that influence fire behavior (Barriers, Slope, Aspect, Elevation, Shape).
10. Notice the specific shapes that influence fire behavior (Narrow and Wide Valleys, Box Canyons, Ridges, Saddles).