Kids and Teachers

The Tree Cookie Game

1. How old was tree **A** when it was cut down?
   About 30 years. There are 30 annual rings; tree age depends on how long it took the tree to grow to the height where the disk was removed.

2. Assuming that tree **A** was cut down in the year 2000, what year appears to have been a better than average growing season?
   1992. Notice the widest ring is the ninth in from the outside edge. This answer assumes that the outermost ring was formed in 2000, so the tree would have been cut down late in the year; if the tree was cut down early in 2000, then the outermost ring was formed in 1999 and the answer is 1991.

3. Which cookie has dark brown heartwood?
   E has dark brown heartwood. Heartwood is the dark inner wood, while sapwood is lighter colored and located in the outside rings.

4. Which cookie is from a tree that had two trunks?
   C is from a tree with two trunks. Notice the two separate circles of concentric rings. At the level of the cookie the two trunks eventually grew together on the outside.

5. Which cookie had five branches connected to the trunk just below where it was cut?
   B has five branches just below where it was cut. Notice the five tight knots that show where the branch bases were when the tree was younger.

6. Which cookie was exposed to the most fires in its life?
   D has 4 to 5 scars; fire scars at disk age 4 (maybe), 5, 6, 14, and 16 (last couple are hard to tell because of discoloration from decay). Fire scars show as darkened areas where cambium was killed by fire that are eventually covered over by "rolls" or callus or woundwood that grow in from the sides of the wounds.

A

B

C

D

7. How many years old was tree **D** when it was last injured by a fire?
About 16 years old (based on disk age).

8. Which tree was suffering from disease?
F. This is subtle, but the aspen (**Populus tremuloides*****) disk in F shows an irregular-shaped discolored area in the middle that indicates the beginnings of decay. The blue stain in disks B, C, and D (these are lodgepole pines;*** **Pinus contorta*****) is caused by a fungus, but normally enters the wood after the tree has died but while the wood is still moist. The missing bark in the black walnut (*****Juglans nigra*****) disk E probably came off when the cut disk dried out. By the way, disk A also is a lodgepole pine.***

E

F