MMNCNY The Compass - Presenter's Notes

1. The Compass
2. Compass History
    - The first compass was invented in China during the Han Dynasty between the 2nd Century BC and 1st Century AD. The purpose it serves in navigation was unknown at the time, and it was used to find precious gems, fortune telling, and predicting the future. Its ability to function as a navigational and orientational tool wasn't discovered until the 11th or 12th century. The magnetic properties were discovered in the 7th century by rubbing iron needles and magnetite or needles cooled from red heat. The red heat is when it gets hot and exhibits a red glow.
3. Early Compass
    - The earliest navigational compasses were made of lodestone, which is a form of magnetite. It was suspended and free to rotate. The shape varied from a spoon or ladle shape. Eventually, the lodestone was replaced with magnetized iron needles.
4. Compass - Wet Compass
    - The wet compass was made of a needle that was placed in water and floated on the surface. One kind was the South Pointing Fish. It was made of a magnetized iron fish that was in a bowl and pointed south.
5. Compass - Dry Compass
    - The dry compass is made with a needle that is mounted on a shaft or hung from a silk thread. This allows rotation. One kind is the turtle compass. That is made of a wooden lodestone turtle, fixed with wax and a protruding needle. The turtle balances on a bamboo needle and it points north.
6. How it Works
    - The compass can pick up Earth’s natural magnetic fields and it is attracted to it. The movement of the liquid part of the earth’s core causes these magnetic fields, and they have two main poles: the north and the south. The magnetic and geographical poles differ slightly but there are adjustments made for the polar difference that make up for it. The southern pole of the needle is attracted to Earth’s north pole and the other way around.
7. Compass Rose
    - There are 32 points originally made to indicate winds, representing the eight major ones: the eight-half winds, and the 16 quarter-winds. On early compass roses, there was a letter to mark these eight winds, like we do now for north (N), East (E), South (S), and West (W). They each had their own symbol that represented the winds.
8. Make Your Own