



Science

Name: ()

Class:

Date: / /

The Nature of Science – How is Your Horoscope?

This activity is designed to help students recognise the difference between “*real science*” and “*pseudoscience*”. A pseudoscience is something that is presented to the general public as a real science, but which is based mostly on assumptions and supported by unprovable claims.

Introduction

Is astrology a science, a pseudoscience or a non-science? A major premise of astrology is that a person’s birth sign correlates with a particular collection of personality traits. In this activity, you will compare your own traits with standard astrological descriptions and then learn whether your actual birthday matches the corresponding astrological dates.

Background

According to astrologers, your horoscope is a map of the planetary positions at the time and place of your birth. Your Sun Sign is the constellation / sign of the Zodiac occupied by the sun on your date of birth. Although there are many factors typically considered when interpreting your horoscope, the Sun Sign is considered the most important factor, revealing your basic personality traits and potentials for growth and development.

Our research question / problem statement is therefore...

“Do personality traits correspond reliably with birth dates?”



Instructions

1. Study the following list of traits and interests until you find the particular combination that comes the closest to describing you.

Number	Key Positive Traits	Main Interests	Possible Negative Traits
1.	Action, initiative, enthusiasm, leader, competitive.	Self, challenge, leading, starting.	Arrogant, quarrelsome, easily bored, selfish, stubborn.
2.	Possessive, determined, practical, enduring, loyal.	Possessions, comfort, beauty, arts, family.	Stubborn, jealous, slow, lazy, greedy.
3.	Intelligent, witty, versatile, curious, popular.	Variety, travel, talking, reading.	Superficial, fickle, impatient, break rules.
4.	Tenacious, domestic, sensitive, emotional, shy, neat, protective.	Security, home, family, country, solitude.	Combative, moody, vain.
5.	Power, authority, romantic, idealistic, self-confident, generous.	Sports, being in charge, teaching, protective.	Egotistical, domineering, blunt, temperamental.
6.	Service, methodical, high standards, practical, neat, reliable.	Routine, details, perfection, travel, working alone.	Fault finding, worry, hurtful.
7.	Harmony, fair, cooperative, romantic, gracious, hard-working.	Companionship, social life, justice, beauty, arts.	Indecisive, extravagant, fickle.
8.	Resourceful, secretive, forceful, emotional, loyal, determined.	Solving mysteries, working hard, success.	Vengeful, cynical, sarcastic, jealous, argumentative.
9.	Hopeful, intuitive, honest, friendly, idealistic, easy going.	Freedom, travel, philosophy, religion, books.	Blunt, tactless, argumentative, not particular.
10.	Ambitious, organized, conservative, frugal, practical, neat.	Hard-working, business, being in charge, caution.	Worry, slave driver, stubborn, social climber.
11.	Independent, helpful, broadminded, tireless, generous.	Helping others, friends, politics, leader.	Dogmatic, rebel, impersonal, stubborn, blunt, argumentative.
12.	Compassionate, sensitive, generous, gentle, dreamy, imaginative.	Hospital, pets, thinking, peace, helping, arts.	Easily influenced, not ambitious, no self-confidence.

2. Write your birthday and the number of the combination of traits and interests that best describes you in the spaces given below:

Date of Birth: **Number:**

3. Now look at the list of dates presented to you by your teacher. Find the range of dates that includes your birthday, and note the corresponding number. Is the corresponding number the same as the number that you wrote down in answer to **Step 2**? If yes then tick "Hit", if no then tick "Miss".

Hit

Miss

4. What are the total number of "Hits" and "Misses" for the class?

- Total number of "Hits"
- Total number of "Misses"

Discussion Questions

1. a) What is the probability that a student would select the "right" number by random chance?

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b) What is the total of all these individual probabilities for the class?

answer to 1. a) \times total number of students in the class

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c) How many students in the class would you expect to choose the "right" number by random chance alone?

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2. If the total number of "Hits" obtained by the class is close to the number expected by random chance, then what does this tell you about the predictability of Sun Signs?

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3. If the total number of "Hits" obtained by the class is significantly higher than expected, then briefly explain what could have caused this. How could you test for or control the cause?

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4. If Sun Signs are fundamental to horoscope interpretation, then what do the class results suggest about the predictability and usefulness of horoscopes?

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5. What problem(s) did you encounter trying to select the Sun Sign description which came closest to how you perceive yourself?

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6. What other tests of astrology can you think of? Consider studying famous people who are experts in different fields.

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7. Why might a person consider his or her horoscope to be true?

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8. Astrology is the “oldest empirical science in the world”. Astrology is based on ancient beliefs about planets and stars, employing mysterious patterns and complex calculations to reveal details of individual personalities and potentials, and provide the basis for critical decisions in a person’s life. Repeated tests and challenges which could have provided support for astrology have consistently shown its predictions and descriptions to be unreliable. Furthermore, no mechanism to explain the supposed relationship between personalities, destinies, planets and stars has ever been demonstrated. Astrology allegedly continues to function due to “mysterious forces”. Explain why astrology is classified as a pseudoscience and *not* a science.

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9. Why do you think that people believe in pseudoscience?

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• Activity adapted from Indiana University Bloomington, <http://www.indiana.edu>

Key to Sun Sign Dates

Number	Dates	Sun Sign
1	21 st March – 19 th April	Aries
2	20 th April – 20 th May	Taurus
3	21 st May – 21 st June	Gemini
4	22 nd June – 22 nd July	Cancer
5	23 rd July – 22 nd August	Leo
6	23 rd August – 22 nd September	Virgo
7	23 rd September – 22 nd October	Libra
8	23 rd October – 21 st November	Scorpio
9	22 nd November – 21 st December	Sagittarius
10	22 nd December – 19 th January	Capricorn
11	20 th January – 18 th February	Aquarius
12	19 th February – 20 th March	Pisces