



San Francisco Opera's
Mozart's *DON GIOVANNI*
Curriculum Connections
California Content Standards
Kindergarten through Grade 12

SCIENCE

The principals of science used in Faust.

THE FIVE SENSES:

Sight, sound, touch, taste, and smell.

Donna Anna hears Don Giovanni's voice, and realizes that he is the man that killed her father. Try closing your eyes and listening to other students speak or sing. Do you recognize them? Do you recognize them when they're singing at the same time as other students?

What are senses involved in experiencing opera?

How do senses develop and decline as you get older?

The loss of what sense would most diminish experience of opera.

PARTS OF THE BODY:

Identification of body parts important to performing. Ex. Diaphragm, larynx, throat, mouth, etc.

Identification of body parts associated with hearing music, how ears work.

Identification of body parts associated with viewing opera, how eyes work.

Examine the science of men and women and psychological and physical differences.

THE ELEMENTS

Fire, Water, Earth, Metal, Air, Wood.

How do technicians create fire effects on stage? What do they need to take into consideration when there are singers on stage at the same time?

How can optical illusions be used to simulate fire?

LIFE SCIENCE

Don Giovanni plans to seduce the wedding guests with chocolate, wine and coffee. Why does he choose those items? What do we know now about neuroscience that links these items? (New discoveries have linked these items as major dietary sources of polyphenols, micronutrients found in plant-based foods.) Chocolate and coffee were new discoveries for Europeans in Mozart's time; were they considered dangerous substances at the time?

Research the history and use of wine. How is wine made?

Research the history and use of chocolate. How is it made?

Research the history and use of coffee. How is it made?

Gardens are discussed often in the opera; what did gardens look like during Don Giovanni's time? How are gardens different today?

How does the body react in times of stress, such as those moments of conflict depicted in the opera?

What was the concept of heaven and hell at the time of the opera? Where were heaven and hell located?

How did Mozart die? Would he have died as young today?

PHYSICS

Sound: Voice, Instruments, Acoustics, Amplification, Recording.

Concepts of Gravity, Time & Space.

Chaos theory: how to organize chaos? It can be done in science and in art. How does Mozart organize chaos?

What kinds of building materials would have been used during the time of Don Giovanni?

There are a lot of mirrors in San Francisco Opera's production of Don Giovanni; how do mirrors work? Explore the history of mirrors.

*Example: Applying the Science Standards to Mozart's *DON GIOVANNI*

GRADE 5

Physical Science

1.0 – f. Students know differences in chemical and physical properties of substances are used to separate mixtures and identify compounds.

Lesson: Watch the scene in Don Giovanni where Don Giovanni takes away Masetto's musket. Research the history and components of gun powder. Pose a number of hypothetical situations involving the relative danger of the musket versus the pistol. Compare and contrast the history and lethality of the two weapons.

ACTIVITIES

Research sources of light during Mozart's time. How would a theater have been illuminated?

What would night sky have looked like during Mozart's time?

List references to nature in *Don Giovanni*.

Explore the characters' psychological motivations.

Research the scientific discoveries of Don Giovanni's time; what would he have known about the world?

Examine the four humors, astrology and alchemy, sciences of the time. Do they relate to modern-day science?

What were scientist like in Mozart's time? How were they different from scientists today?

Metallurgy for making weapons. What kind of weapons would they have had in Don Giovanni's time? Where did they get gunpowder? What is it made of? How does it work?