

Scientific Method Case Studies

#1 Oil Spill Case Study

In 2010, an explosion on an oil rig caused a terrible oil spill in the Gulf of Mexico. As oil started washing up on shore, the area wildlife was drastically affected. A scientist wonders how do different amounts of water pollution affect the height of radish plants? He thinks that the plants with the most pollution will not grow as tall. He plants ten seeds in dirt in separate cups and gives them water every day. He has mixed the water with different amounts of motor oil (as pollution). He gives each tree a different level of pollution. He continues this for several weeks, and measures the height of each plant and finds that the more pollution the less the plant grew.

Label: Problem, Hypothesis, Independent Variable (IV), Dependent Variable (DV), Control Group, Constants, Data, Conclusion

#2 Plant Hormones Case Study

A student wondered how hormones affected plant growth and wanted to test the hypothesis that rooting hormones will stimulate the production of new roots at a faster rate than would take place without rooting hormones. Two stem cuttings of equal length were taken from a geranium plant. The cut end of one plant was dipped into the hormone and then planted in wet sand. The other cutting was planted in wet sand without dipping it into the hormone. Both cuttings were given water and sunlight. After 4 weeks, both cuttings were removed from the sand and the lengths of the roots that had developed were measured and found to be the same.

Label: Independent Variable (IV), Dependent Variable (DV), Control Group, Constants

Scientific Method Case Studies

#1 Oil Spill Case Study

In 2010, an explosion on an oil rig caused a terrible oil spill in the Gulf of Mexico. As oil started washing up on shore, the area wildlife was drastically affected. A scientist wonders how do different amounts of water pollution affect the height of radish plants? He thinks that the plants with the most pollution will not grow as tall. He plants ten seeds in dirt in separate cups and gives them water every day. He has mixed the water with different amounts of motor oil (as pollution). He gives each tree a different level of pollution. He continues this for several weeks, and measures the height of each plant and finds that the more pollution the less the plant grew.

Label: Problem, Hypothesis, Independent Variable (IV), Dependent Variable (DV), Control Group, Constants, Data, Conclusion

#2 Plant Hormones Case Study

A student wondered how hormones affected plant growth and wanted to test the hypothesis that rooting hormones will stimulate the production of new roots at a faster rate than would take place without rooting hormones. Two stem cuttings of equal length were taken from a geranium plant. The cut end of one plant was dipped into the hormone and then planted in wet sand. The other cutting was planted in wet sand without dipping it into the hormone. Both cuttings were given water and sunlight. After 4 weeks, both cuttings were removed from the sand and the lengths of the roots that had developed were measured and found to be the same.

Label: Independent Variable (IV), Dependent Variable (DV), Control Group, Constants