



Lab #8: Exploring Plant Responses

45 Points

PART 1: BACKGROUND: Plants can respond to their external environment. A **tropism** is a plant's growth in response to an environmental condition. When plants grow toward something it is called a **positive tropism**. Stems and leaves are positively phototropic, they grow toward light. This is called phototropism. **Phototropism** is plant growth toward a light source. When a plant grows away from something, it is called **negative tropism**. Roots are negatively phototropic, they grow away from the light and into the soil, but they have positive **gravitropism** – meaning the roots grow into the soil with the force of gravity. Leaves and stems have negative gravitropism because they grow against the force of gravity. Another form of tropism is **thigmotropism** which is the response plants have to touch.

Virtual Video: Click on the following link to watch the virtual lab, then proceed to each part of the lab below and complete each section.
<https://www.youtube.com/watch?v=5oEaC8bxClc>

PURPOSE: In this lab, you will observe how plants respond to the following stimuli: light, gravity, and touch and hormones

PROCEDURE: Go through the steps below and look at the pictures for information. The information can be found in the pictures below for each step of the lab. Zoom your screen so you can see the details of each step of the lab.

PRE-LAB – Plant Responses Predictions: Describe how you think plants may respond to each of the stimuli listed.(3 points)

Table 1:

Stimulus	Response – will some or all parts grow or move towards or away from the stimulus?
Light	The plants will grow towards light
Gravity	Will grow dependent on gravity
Touch	Will respond negatively to touch

MATERIALS: Look at the pictures below or from the online simulation. List the materials needed for this lab simulation.



List of Materials	
150 ml beaker with potting soil	Wet filter paper
radish seeds	wet cotton bunting
Cardboard box	Folded index cards
Aluminum foil caps	cover
corn seeds	Mimosa plant
petri dish with cover	Water bottle

PART A - Responses to Light: You will observe the effects of light on the direction of radish plant growth. Read the steps and study the pictures from the simulation, then complete table 2.

Step 1:



Radish seeds were planted in the petri dish then watered to moisten the soil.

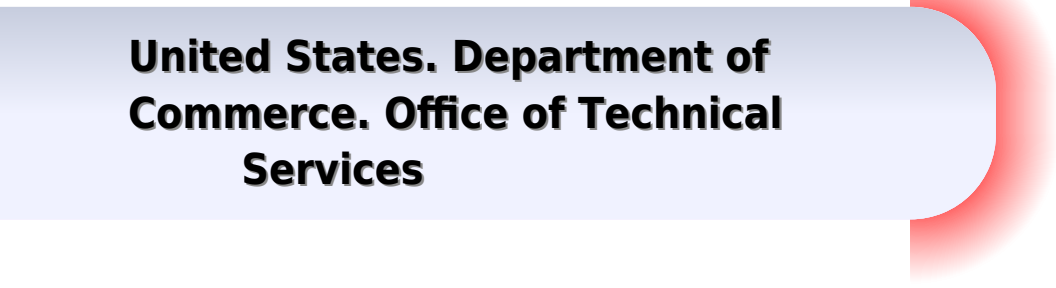
Step 2:



The seeds were left in the dark and allowed to grow for three to 5 days.

Virtual Lab Exploring Plant Responses Answers

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Teaching Community College and Historically Underserved Students Melissa Dennihy, Zivah Perel Katz, 2024-11-15 This textbook develops and presents a new hybrid pedagogy that integrates the best practices of both face to face and online teaching within community colleges and other access oriented institutions Focusing specifically on historically underserved students this text demonstrates how online pedagogy offers new and different approaches to learning engaging collaborating and communicating which can also be adapted for face to face classrooms creating an innovative blended pedagogy that builds upon both course experiences Recognizing that higher education is at a unique turning point as the Covid 19 pandemic and its effects become endemic this volume offers educators ways to forge new paths forward and prepare for future crises by learning how to maximize the possibilities of both face to face and online learning tools and approaches

Carolina Science and Math Carolina Biological Supply Company, 2003 *Answers to Your Biggest Questions About Teaching Secondary Science* Karen Mesmer, Enya Granados, Kevin Gant, Laura Shafer, Ayanna D. Perry, 2024-01-16 Your guide to grow and flourish as a science teacher The past two decades have seen a paradigm shift in science education thanks in large part to the Next Generation Science Standards NGSS which advocate a move away from procedural lab investigations and direct instruction and toward increased emphasis on reasoning sensemaking phenomena exploration problem solving and collaboration Under this new paradigm students are learning real science as scientists practice it so that more and more students are actively investigating questions and pursuing solutions of their own making As part of the Five to Thrive series for early career educators this comprehensive guide provides those who are new to teaching science as well as seasoned teachers looking to enhance their practice the fundamentals to develop best teaching practices that reflect their students experiences and requirements Written by experienced science educators *Answers to Your Biggest Questions About Teaching Secondary Science* provides practical guidance on successful strategies and techniques for teaching science in a way that gives every student the opportunity to learn grow and achieve at high levels while providing opportunities to develop their agency and authority in the classroom ultimately resulting in a positive science identity The book is organized around five overarching questions and answers that will help you most thrive in your secondary science classroom How do I build a positive science community How do I structure organize and manage my science class How do I engage my students in science How do I help my students talk about science How do I know what my students know and how can I use that information to plan and move them forward The book concludes with a sixth question Where do I go from here that provides guidance for growing your practice over time including discussions on self care advocating for students and an extensive discussion on growing your professional network Woven throughout you ll find helpful sidebar notes on fostering identity and agency access and equity teaching in different settings and invaluable resources for deeper learning Strive to become the best science educator you can be your students are counting on it *Energy Research Abstracts* ,1988 **Resources in**

Education ,1984 **Applied Mechanics Reviews** ,1984 Keywords Index to U.S. Government Technical Reports United States. Department of Commerce. Office of Technical Services,1963 **Keywords Index to U.S. Government Technical Reports (permuted Title Index)**. United States. Department of Commerce. Office of Technical Services,1963

Government-wide Index to Federal Research & Development Reports ,1967 **Scientific and Technical Aerospace Reports** ,1995-08 Title List of Documents Made Publicly Available U.S. Nuclear Regulatory Commission,1980
Fusion Energy Update ,1986 *Nuclear Science Abstracts* ,1974-06 *Selected Water Resources Abstracts* ,1986-07

Handbook of Water Analysis Leo M.L. Nollet,Leen S. P. De Gelder,2000-06-27 This work details water sampling and preservation methods by enumerating the different ways to measure physical chemical organoleptical and radiological characteristics It provides step by step descriptions of separation residue determination and cleanup techniques for a variety of fresh and salt waters It also discusses information regarding the analysis and detection of bacteria and algae

Cumulated Index Medicus ,1964 *Index Medicus* ,2001 *Responsible and Resilient Design for Society, Volume 6*
Amaresh Chakrabarti,Vishal Singh,Prasad S. Onkar,Mohammad Shahid,2025-10-11 This book showcases cutting edge research papers from the 10th International Conference on Research into Design ICoRD 2025 the largest in India in this area written by eminent researchers from across the world on design processes technologies methods and tools and their impact on innovation This tenth edition of this biennial conference delves into the multifaceted nature of design showcasing cutting edge research and fostering collaboration It aims to showcase cutting edge research about design to the stakeholders aid the ongoing process of developing and extending the collective vision through emerging research challenges and questions and provide a platform for interaction collaboration and development of the community in order for it to take up the challenges to realize the vision The contemporary world is in the midst of significant shifts encompassing everything from climate change to the rapid advancements in Artificial Intelligence These transformations impact the fabric of everyday human lives and society as a whole In this context design emerges as a crucial player offering a pivotal role in navigating these changes to foster a balanced and just world This conference edition therefore has the theme of Responsible and Resilient Design for Society underscoring the importance of adopting approaches that contribute to building a resilient society while acknowledging the responsibilities that come with being designers and researchers The book will be of interest to researchers professionals and entrepreneurs working in the areas on industrial design manufacturing consumer goods and industrial management who are interested in the new and emerging methods and tools for design of new products systems and services The Software Encyclopedia 2000 Bowker Editorial Staff,2000-05 **Toxicology Research Projects Directory** ,1979

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