

# Murphy-Pacino Spring 2013 Outline

## 1. Static Electricity Intro

-powerpoint of basics: [https://docs.google.com/presentation/d/19q\\_4mnZJp3yC-uBRxm3JQvwNopygVbC7tZB5dwTGCoM/edit?usp=sharing](https://docs.google.com/presentation/d/19q_4mnZJp3yC-uBRxm3JQvwNopygVbC7tZB5dwTGCoM/edit?usp=sharing)

-demos: pvc pipe, wool/felt, and paper, paperclips

-Comment: We had planned on the kids all trying to make static electricity each with a plastic ruler. The plastic rulers did not pick up anything.

## 2. Squishy Circuits

-powerpoint of circuit basics

<https://docs.google.com/presentation/d/1T-p5pOAGi-hcP1cxoq0BkhJe0pQJLhXQcywRkfWAWCQ/edit?usp=sharing>

## 3. Valentine's Day Electrical Greeting Cards

-craft activity that reviewed simple circuits. They built a card that incorporated a circuit with a battery and a light or a motor.

P1020607.JPG example with motor

P1020614.JPG example with light

## 4. Build A Flashlight

[http://www.teachengineering.org/view\\_activity.php?url=collection/cub\\_/activities/cub\\_electricity/cub\\_electricity\\_lesson05\\_activity2.xml](http://www.teachengineering.org/view_activity.php?url=collection/cub_/activities/cub_electricity/cub_electricity_lesson05_activity2.xml)

-application of circuits in everyday life

-making the circuits more compact for a device

-switches

Power Point: [https://docs.google.com/presentation/d/18zSbO\\_11YSnT0uT4h\\_ZHQhe9cIHHdI7XZphsCUCmD2M/edit?usp=sharing](https://docs.google.com/presentation/d/18zSbO_11YSnT0uT4h_ZHQhe9cIHHdI7XZphsCUCmD2M/edit?usp=sharing)

**We tried to make the circuit building easier** by using christmas lights and cutting them up and exposing the wires like this <http://www.stevespanglerscience.com/experiment/light-circuit-sick-science>. We went through a lot of bulbs because they would burn out often using 9V batteries so it was useful to have a whole string of lights available and we could just strip more as we needed.

We also bought 6 of these switches <https://www.sparkfun.com/products/9414> later in the semester which would have been good for this project so they are available in the supply closet now, check for them with the light bulbs.

## 5. Parallel circuits

-discovery experiment, how to keep one light on while turning one off

Powerpoints: Parallel circuits [https://docs.google.com/presentation/d/1sn3coOqPsIKPVqWZntIFqB\\_s6oL7Mf3BlmbnTk3vws/edit?usp=sharing](https://docs.google.com/presentation/d/1sn3coOqPsIKPVqWZntIFqB_s6oL7Mf3BlmbnTk3vws/edit?usp=sharing)

"Will this circuit work?" review <https://docs.google.com/presentation/d/15wuVU2suXNHob99nINiqtpK3u2xd4MvrgB3MHL65ziU/edit?usp=sharing>

## 6. Electromagnets

-building

-picking up paper clips

-talk about the connection between electricity and magnetism

Power Point: [https://docs.google.com/presentation/d/1lus-FQM13woiM\\_0fQl8qatLTfT1iJaCupTqeXCJ9Nw/edit?usp=sharing](https://docs.google.com/presentation/d/1lus-FQM13woiM_0fQl8qatLTfT1iJaCupTqeXCJ9Nw/edit?usp=sharing)

## 7. Superhero final project-using circuits and electromagnets to build a superhero device

Power Point: [https://docs.google.com/presentation/d/1VGMxUeLu9hEkg9qw8sjRmN\\_qnwySulXZEDkxv4RHWm4/edit?usp=sharing](https://docs.google.com/presentation/d/1VGMxUeLu9hEkg9qw8sjRmN_qnwySulXZEDkxv4RHWm4/edit?usp=sharing)

Individual Design Worksheet: [https://docs.google.com/document/d/1rBQKJo6uvAHjBAX2c1FmD7h8cXF\\_QiBdUP7kyUdQ8Ks/edit?usp=sharing](https://docs.google.com/document/d/1rBQKJo6uvAHjBAX2c1FmD7h8cXF_QiBdUP7kyUdQ8Ks/edit?usp=sharing)

Group Design Worksheet: [https://docs.google.com/document/d/1uJp\\_qTVTgyViyov2-VUzgyf3AJQVLgqfcEKmY2728Yg/edit?usp=sharing](https://docs.google.com/document/d/1uJp_qTVTgyViyov2-VUzgyf3AJQVLgqfcEKmY2728Yg/edit?usp=sharing)