

# Doppler spin

**DO NOT TRY THIS AT HOME**

**#54**

Featuring: **Marvin and Milo**

**What you need:** • A buzzing egg timer • Sticky tape • A piece of string about 1 metre long • A friend

This will wake you up Milo!

Tie the piece of string to the egg timer securely, using some sticky tape as well if needed.

With the timer buzzing, hold the other end of the string very tightly and start to swing it in a circle around your head. Make sure your friend is standing well back and there's nothing breakable near you.

## What you need

A buzzing egg timer

A piece of string ~1 m

Sticky tape

A friend

## Instructions

1. Tie the piece of string to the egg timer securely, using some sticky tape as well if needed.
2. With the timer buzzing, hold the other end of the string very tightly and start to swing it in a circle around your head. Make sure your friend is standing well back and there's nothing breakable near you.

## Results & Explanation

*After you have performed this experiment, describe what the person swinging the bell heard ("cat") and what the person standing away from the bell heard ("dog"). Additionally, describe the phenomenon that is happening using vocabulary and concepts from the wave motion unit. Lastly, finish the white boxes of the cartoon with a clever application of the physics concepts!*

## Cartoon Physics Rubric

CATEGORY	4	3	2	1
<b>Wave Behavior Concepts</b>	Explanation shows complete understanding of the wave behavior concepts used to explain the experiment.	Explanation shows substantial understanding of the wave behavior concepts used to explain the experiment.	Explanation shows some understanding of the wave behavior concepts needed to explain the experiment.	Explanation shows very limited understanding of the underlying concepts needed to explain the experiment OR is not written.
<b>Wave Behavior Terminology</b>	Correct terminology is always used, making it easy to understand what was done.	Correct terminology is usually used, making it fairly easy to understand what was done.	Correct terminology is used, but it is sometimes not easy to understand what was done.	There is little use, or a lot of inappropriate use, of terminology.
<b>Explanation</b>	Explanation is detailed and clear.	Explanation is clear.	Explanation is a little difficult to understand, but includes critical components.	Explanation is difficult to understand and is missing several components OR was not included.
<b>Neatness and Organization</b>	The work is presented in a neat, clear, organized fashion that is easy to read.	The work is presented in a neat and organized fashion that is usually easy to read.	The work is presented in an organized fashion but may be hard to read at times.	The work appears sloppy and unorganized. It is hard to know what information goes together.
<b>Cartoon Additions</b>	Words and/or sketches are clear and greatly add to the reader's understanding of the experiment.	Words and/or sketches are clear and easy to understand.	Words and/or sketches are somewhat difficult to understand.	Words and/or sketches are difficult to understand or are not used.
<b>Completion</b>	All requirements are completed.	All but one of the requirements are completed.	All but two of the requirements are completed.	Several of the requirements are not completed.
<b>TOTAL</b>				/ 24