

FOREWORD



Beginning Datalogging: Blackline Masters is a book to be used with students that are datalogging for the first time, or for those who have little experience with it. The activities can be treated as stand-alone sessions or can be integrated into existing curriculum practice.

This book is designed as a springboard, and has ideas that will equip both teachers and students with datalogging skills. Other applications for datalogging technology will also be discovered.

These activities and work sheets can be used with any datalogger. The activities are designed to allow students to analyse, record and graph data in any way they choose, or in whichever way their equipment allows. This book consists of a variety of activities for a variety of age groups. Some tasks are simple and require little direction. Other activities are more open-ended and require students to hypothesise, design investigations, conduct investigations and draw conclusions.

The lessons can be used sequentially. Students begin by investigating the notion of datalogging, then look closely at the equipment they have, investigate how the equipment works and use it in a more general way. The aim is for students to begin to understand how this technology can help them investigate concepts.

Temperature probes are more reliable than thermometers. The results are instant, and students can record changes within seconds. The naked eye could not see such changes. A datalogger is cutting-edge technology at the fingertips of even the youngest child.

Temperature probes and light probes are the only types of probe used in this book. Both are easy to integrate into existing curriculums and are readily available. When students and teachers become confident users of datalogging technology, a whole new world will open up – motion sensors; sound sensors; sensors to measure pH levels, humidity, heart rate. Something so easy can lead to quite sophisticated science.

Be confident with this technology, and enjoy the lessons that will inspire your students to investigate further.

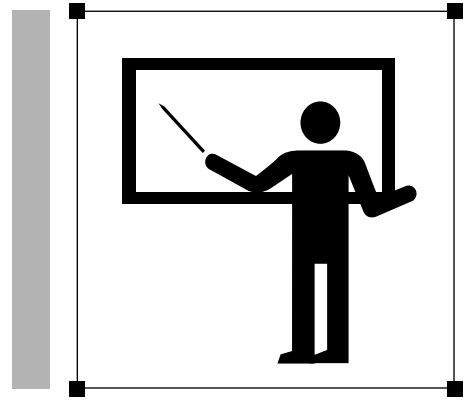
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DATALOGGING INVESTIGATIONS

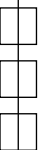


List the things you would like to investigate using a datalogger and *temperature* probes.

In point form, write how you would investigate such things.

List the things that you would like to investigate using a datalogger and *light* probes.

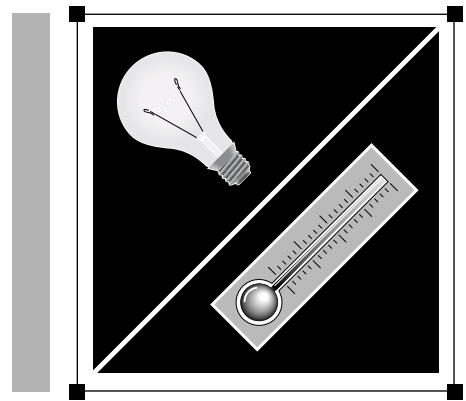
In point form, write how you would investigate such things.



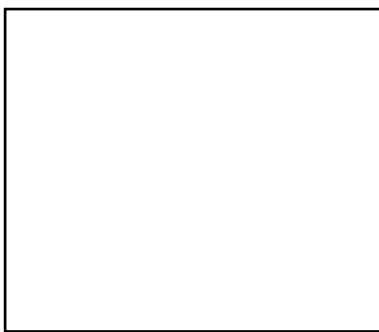
Name: _____

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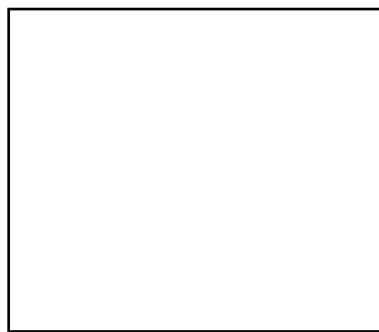
FIRST RECORDINGS: LIGHT AND TEMPERATURE



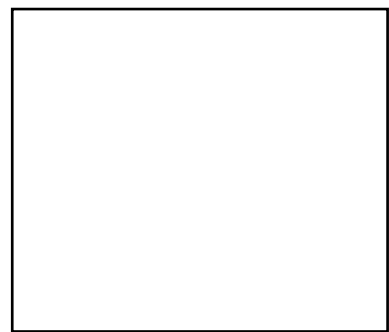
Take a light reading at nine different locations. Draw and record the readings.



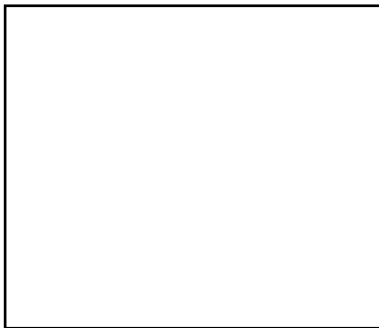
1. Light reading ____



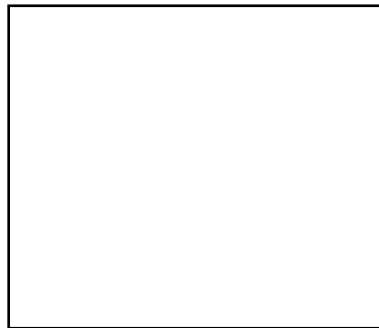
2. Light reading ____



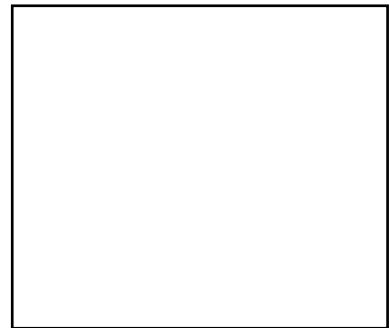
3. Light reading ____



4. Light reading ____



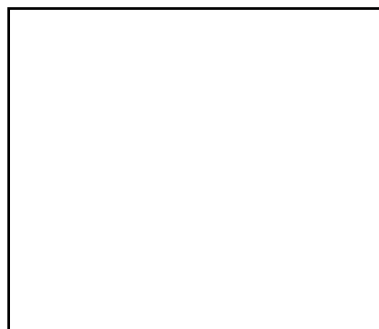
5. Light reading ____



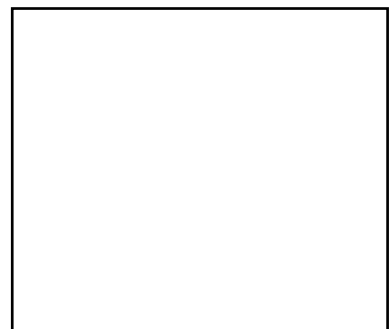
6. Light reading ____



7. Light reading ____



8. Light reading ____



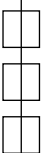
9. Light reading ____

Which is the lightest location? _____

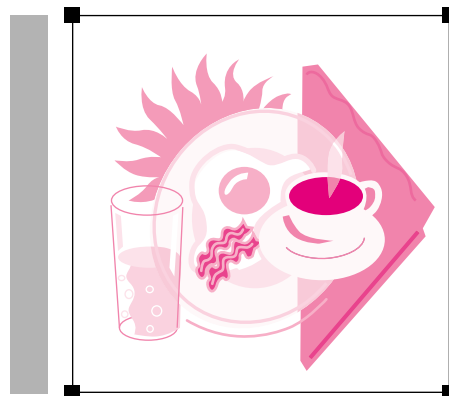
Which is the darkest location? _____

Name: _____

Date: _____



COOLING AND SURFACE AREA



Is there a correlation between cooling and surface area? Write a hypothesis.

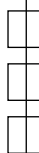
INVESTIGATION

PROCEDURE

1. Fill one cup with 250 mL of hot water.
2. Fill one bowl with 250 mL of hot water. (Temperature of the water needs to be the same in both cups.)
3. Record the temperature for 15 minutes.

What happened to the temperature of the water in the cup?

What happened to the temperature of the water in the bowl?



Name: _____

Date: _____