



Trent University

Physics 2093H

Put on your
speakers or earphones first

The audio part of this presentation was recorded for an earlier semester and so it may not make complete sense for our course...

Then, up on the top
tool bar of your screen
click on:

“**Slide Show**” and then

“**View Show**”

Then hit the “**space bar**” once





***Welcome to
Physics 2093H:
Physical Science
for Elementary
Teachers – Elect.
& LPG, 2023***





Johann Beda

First: let's get to know who I am; that's me

Instructor at Trent since 2003....

- taught at UIUC, McMaster, Trent**
- Research interests in Physics Education**





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Instructor at Trent since 2003....

- taught at UIUC, McMaster, Trent**
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Research

- High Energy Theory (Particle Physics)**
- Physics Education**

Interested in how people learn science...



I would like you to jot down (on the worksheets) three or four ideas about what type of person would get the most out of this class.

1) *Entrepreneur*

2)

3)

4)

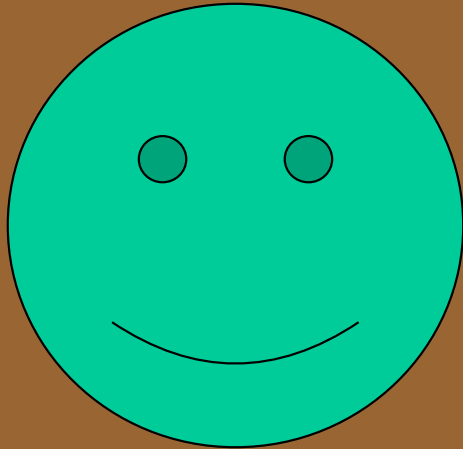


**Now share your list of ideas
with your neighbour for a few minutes.**

Do they have different ideas from you?

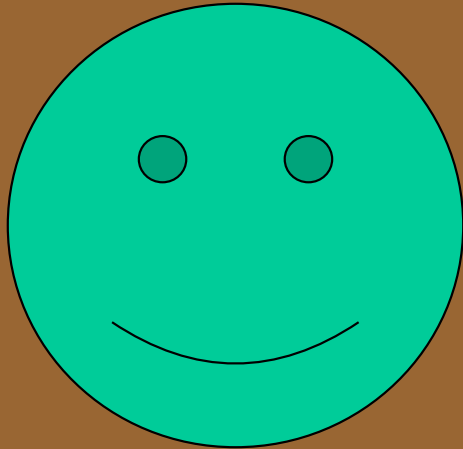


Who would you like to be?



Your name here





Your name here

Who would you like to be?

Write that name on your fancy new journal.



I would like you to jot down (on the worksheets) three or four items about you... anything you think might interest others

1) *I'm a chello*

2)

3)

4)



**Now share your list (and your name)
with your neighbour for a few minutes.
Meet a classmate.**

(Don't worry, you will not have to share with everyone)



We all do it sometimes, don't we?



Again on the worksheets, I'd like you to jot down three or four ideas about your expectations for the course....

1)

2)

3)

4)



Again on the worksheets, I'd like you to jot down three or four ideas about your expectations for the course....

1) Eat dough-nuts each class

2)

3)

4)



**Now share your list with your neighbour
for a few minutes.**

Are your expectations the same as theirs?



**Now here are some of my ideas
about my expectations for the course....**

1)

2)

3)

4)



**Now here are some of my ideas
about my expectations for the course....**

1) Safe Classroom

2)

3)

4)



**Now here are some of my ideas
about my expectations for the course....**

1) Safe Classroom

2) Restraint

3)

4)



**Now here are some of my ideas
about my expectations for the course....**

- 1) Safe Classroom**
- 2) Restraint**
- 3) Ontario 1-8 Curriculum**
- 4)**

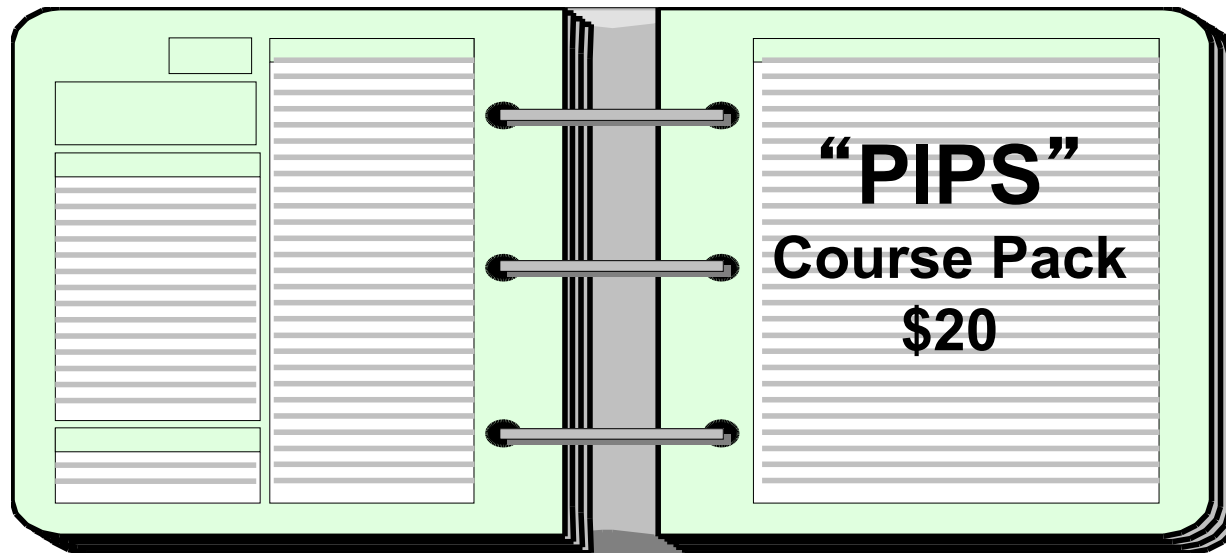


**Now here are some of my ideas
about my expectations for the course....**

- 1) Safe Classroom**
- 2) Restraint**
- 3) Ontario 1-8 Curriculum**
- 4) Have Some Fun Together**



Text / Workbook:
“Powerful Ideas
in
Physical Science”



“PIPS” presents **Case Studies** that will



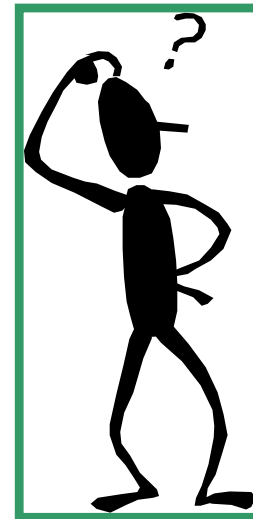
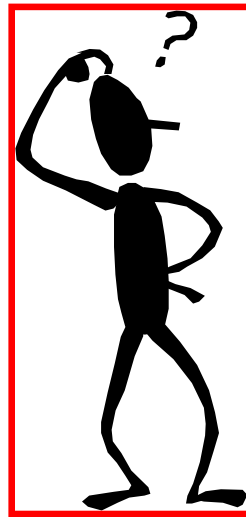
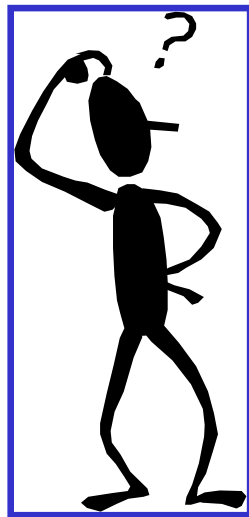
“PIPS” presents **Case Studies** that will

- clarify things you already know



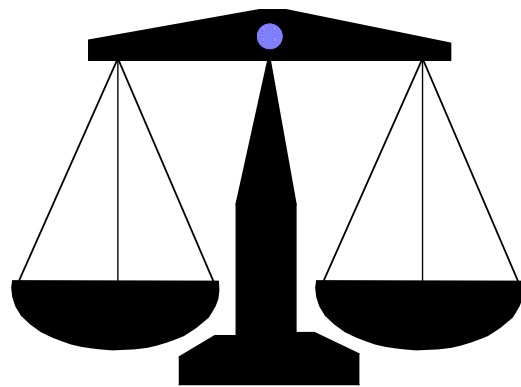
“PIPS” presents **Case Studies** that will

- clarify things you already know
- reveal differences among the class



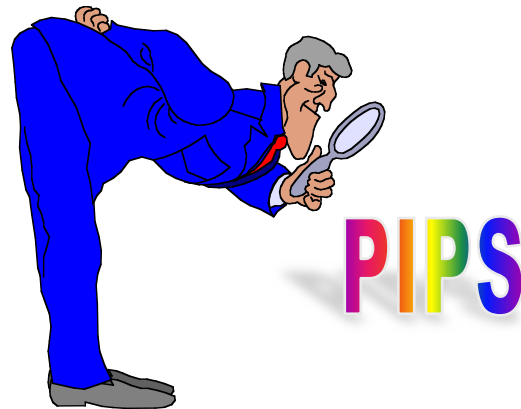
“PIPS” presents Case Studies that will

- **clarify things you already know**
- **reveal differences among the class**
- **get you to predict outcomes**



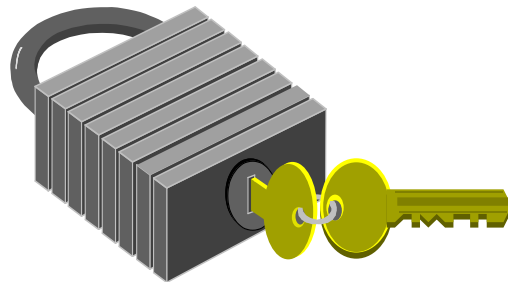
“PIPS” presents Case Studies that will

- **clarify things you already know**
- **reveal differences among the class**
- **get you to predict outcomes**
- **lead you to experiment and discover**



“PIPS” presents **Case Studies** that will

- **clarify things you already know**
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- **get you to predict outcomes**
- **lead you to experiment and discover**
- **document what you have discovered**



“PIPS” presents Case Studies that will

- **clarify things you already know**
- **reveal differences among the class**
- **get you to predict outcomes**
- **lead you to experiment and discover**
- **document what you have discovered**
- **examine scientific learning processes**



“PIPS ...

- a) elicits students' existing notions in writing and in groups.**
- b) presents *disequilibrating experiences* which prompt reexaminations and reevaluations of existing notions.**
- c) engages students in carefully designed collaborative activities.**
- d) leads students to constructing their own new notions and improved conceptual understanding. “**

Source: “PIPS instructor’ s guide”



Engaged Learning in.....

- Light & Colour
- Electricity
- Motion
- Pulleys, Levers and Gears

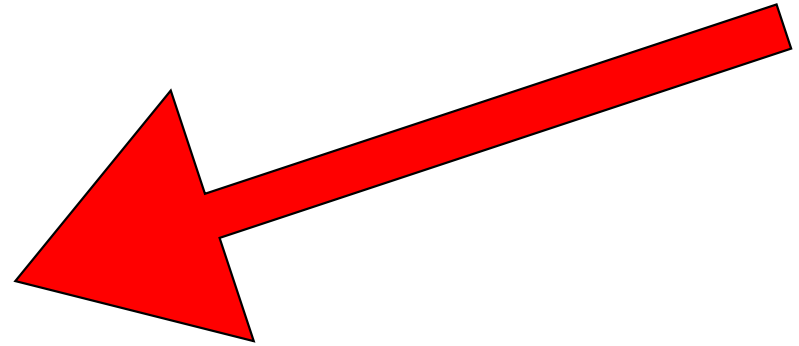


Let's examine an example taken from.....

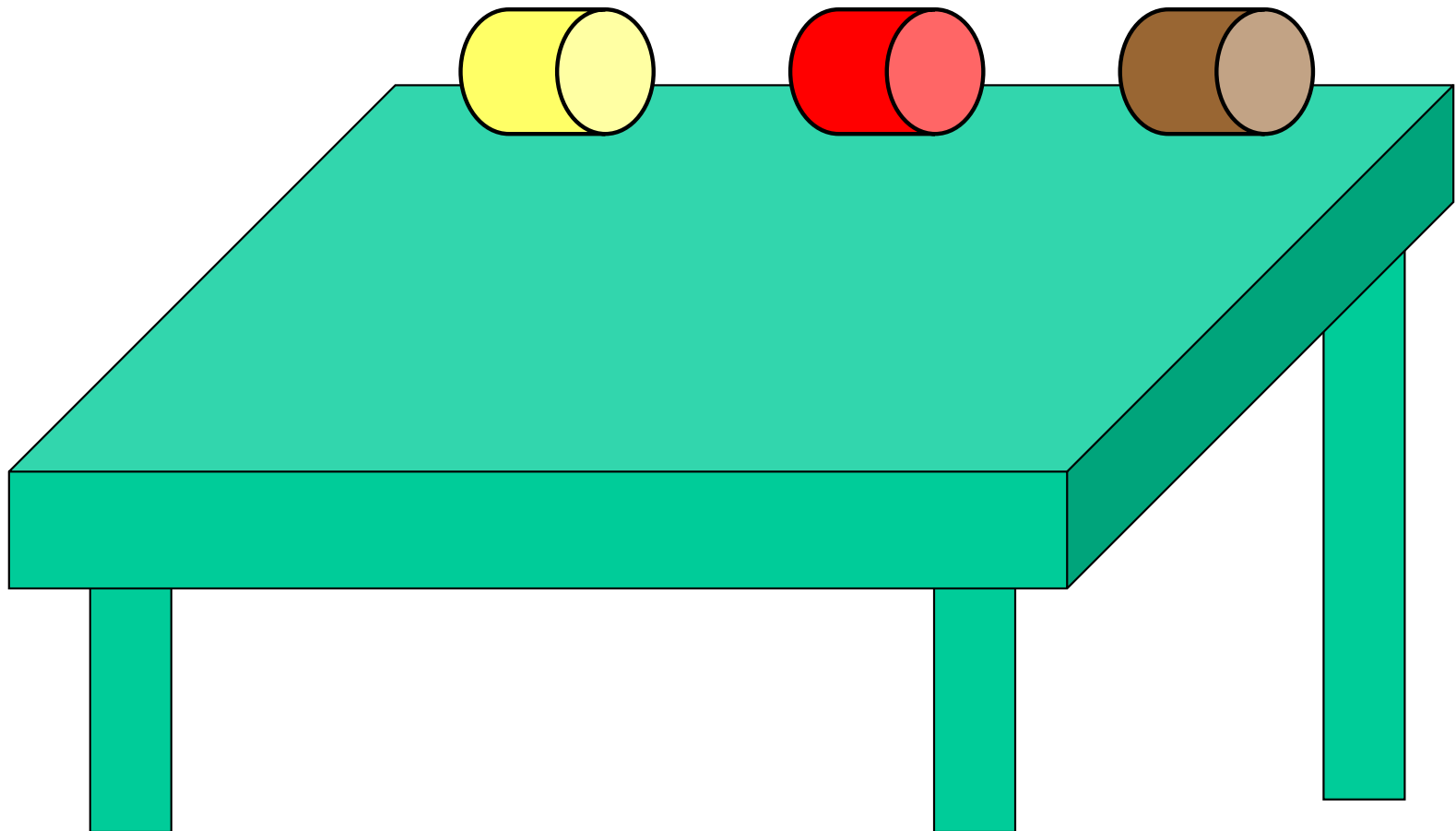
- Light & Colour
- Electricity

- Motion

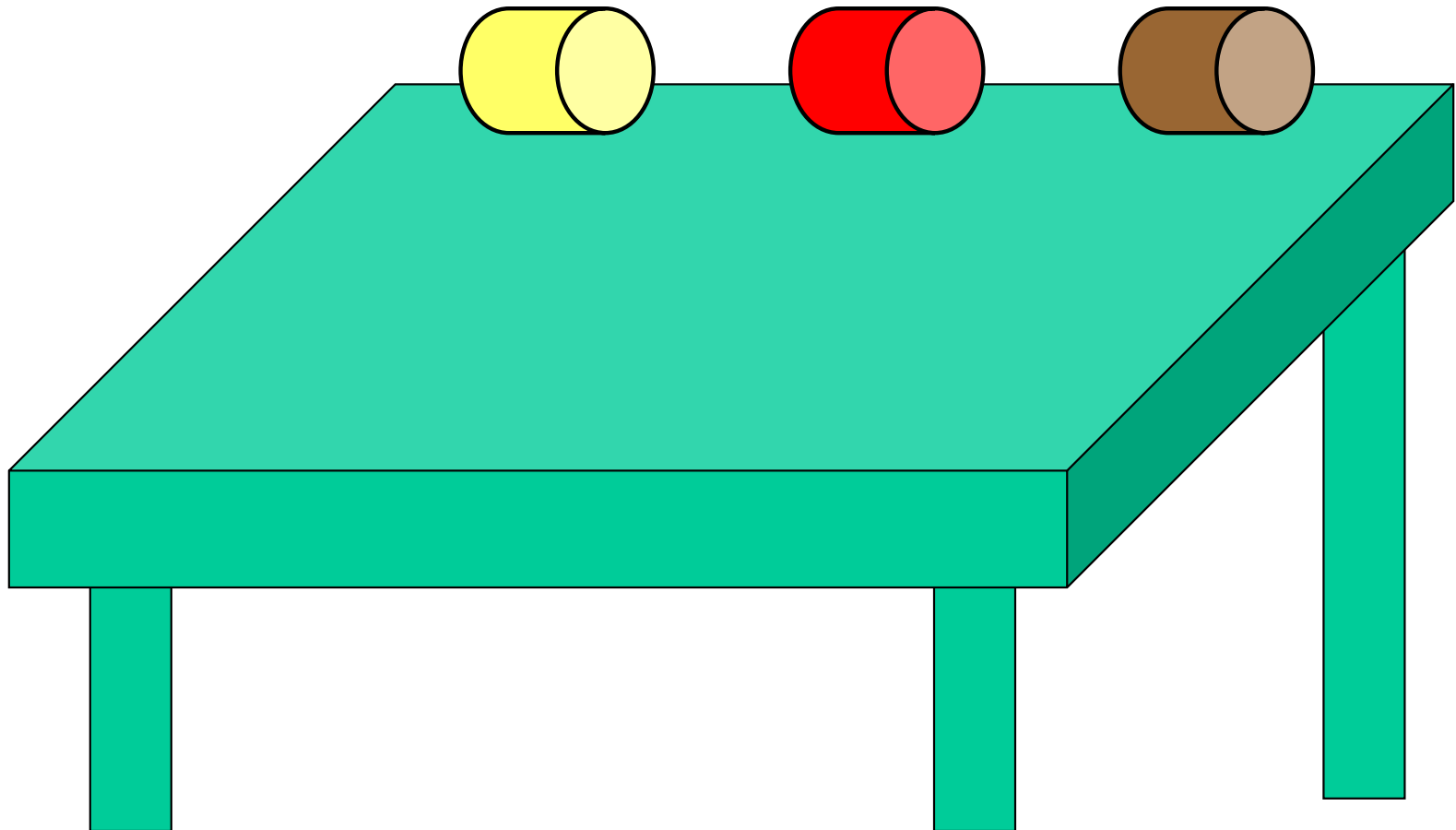
- Pulleys, Levers and Gears



What do you think?



What does the group think?

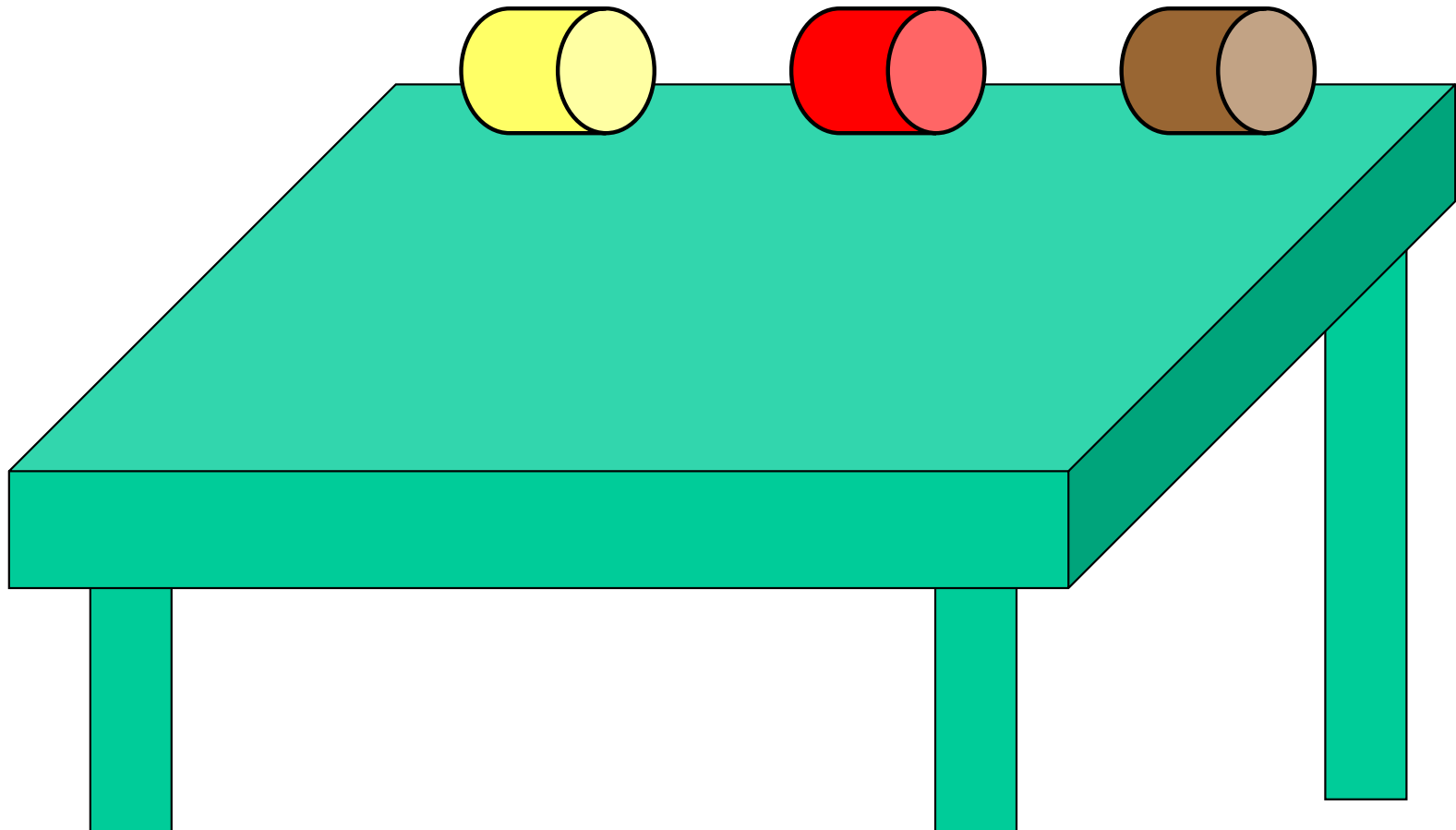


What do you think?

What does the group think?

Making Observations

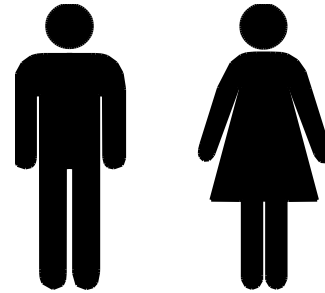
Making Sense





Other aspects of Physics 2091H...

- Journals



- Ontario's 1-8 Science Curriculum

- *How we learn most effectively*

- E-mail & other communications



That's John Earnshaw facilitating someone's learning in the Physics 209x lab



Your tasks before the next class:

- **Get your “trentu.ca” accounts activated and complete the myLearningSystem demographics survey.**
nb: If you wish to use another e-mail address, set your “trentu.ca” e-mail to be automatically forwarded.



Your tasks before the next class:

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If you had an account previously,

but have not used it recently,

you may have to logon to

<https://www.trentu.ca/mytrent/activate.php>



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With SafeAssign



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- **Send me a short e-mail message (under 100 words, with “Physics 2093H Intro” in the subject line) from your trentu.ca email account introducing yourself, and telling me your expectations for the course. (Do this soon, but at least a day before your next class.)**



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- **Post a message in the online class discussion forum.**
(Use the topic “Homework 01/Assignment 0” in the category “Homework and Assignments”. Make it under 100 words, with the subject “HW01 - Intro Messages”. Include something interesting - maybe your favourite cookie recipe.)

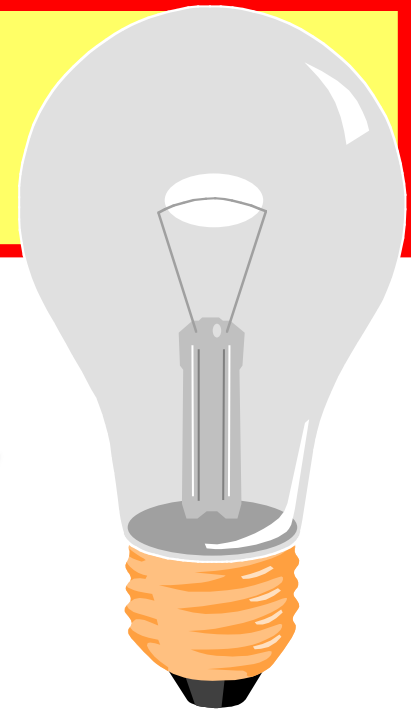


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- **Send me a short e-mail message from your trentu.ca email account introducing yourself, and telling me your expectations for the course.**
- **Post a message in the online class discussion forum.**
- **Look at Assignment #1.**



PHYSICS 2093H...



“constructivist learning” by
“engaged interactions”

Get your network ID at <https://www.trentu.ca/mytrent/activate.php>

My name is Johann Beda

My e-mail address is jbeda@trentu.ca

The course WEB page is at:

<http://www.beda.ca/johann/trentu/PHYS209x/>

<http://www.trentu.ca/mytrent/>

