



Trent University

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

# Physics 2090Y

Put on your  
**speakers or earphones first**

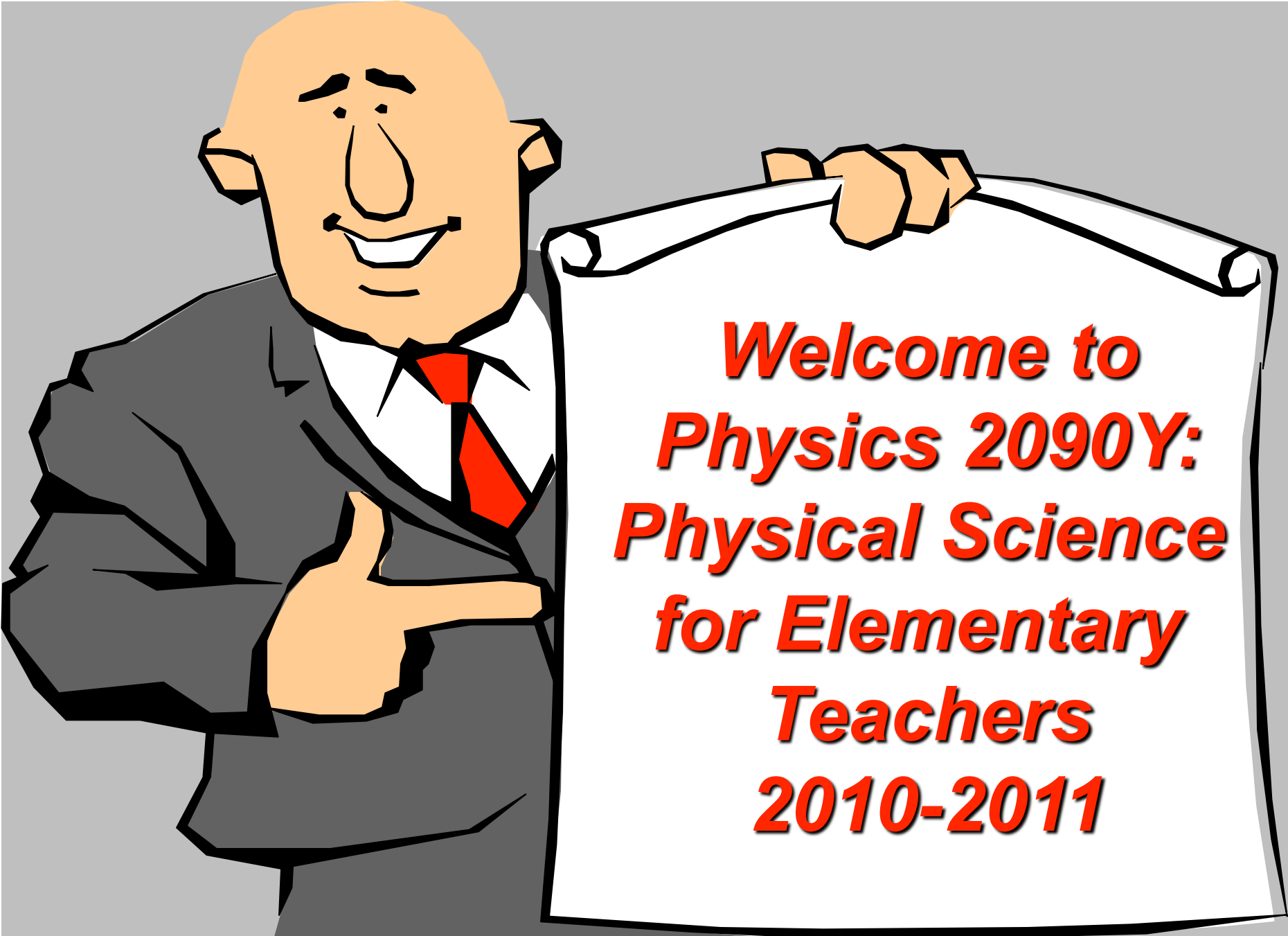
Then, up on the top  
tool bar of your screen  
click on:

“**Slide Show**” and then

“**View Show**”.....

Then hit the “**space bar**” once



A cartoon illustration of a bald man with a friendly expression, wearing a grey suit, white shirt, and red tie. He is pointing his right hand towards a large white scroll he is holding with his left hand. The scroll contains the following text:

***Welcome to  
Physics 2090Y:  
Physical Science  
for Elementary  
Teachers  
2010-2011***





**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**





**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

**Research**

- High Energy Theory (Particle Physics)
- Physics Education

**Interested in how people learn science...**



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

1) I'm a hello

2)

3)

4)



**Now share your list 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 Physics 2090Y....**

1)

2)

3)

4)





**Again on the worksheets, I'd like you to jot down three or four ideas about your expectations for Physics 2090Y....**

**1) 100% "A+"**

**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 Physics 2090Y....**

**1)**

**2)**

**3)**

**4)**



**Now here are some of my ideas  
about my expectations for Physics 2090Y....**

**1) Safe Classroom**

**2)**

**3)**

**4)**



**Now here are some of my ideas  
about my expectations for Physics 2090Y....**

**1) Safe Classroom**

**2) Restraint**

**3)**

**4)**



**Now here are some of my ideas  
about my expectations for Physics 2090Y....**

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

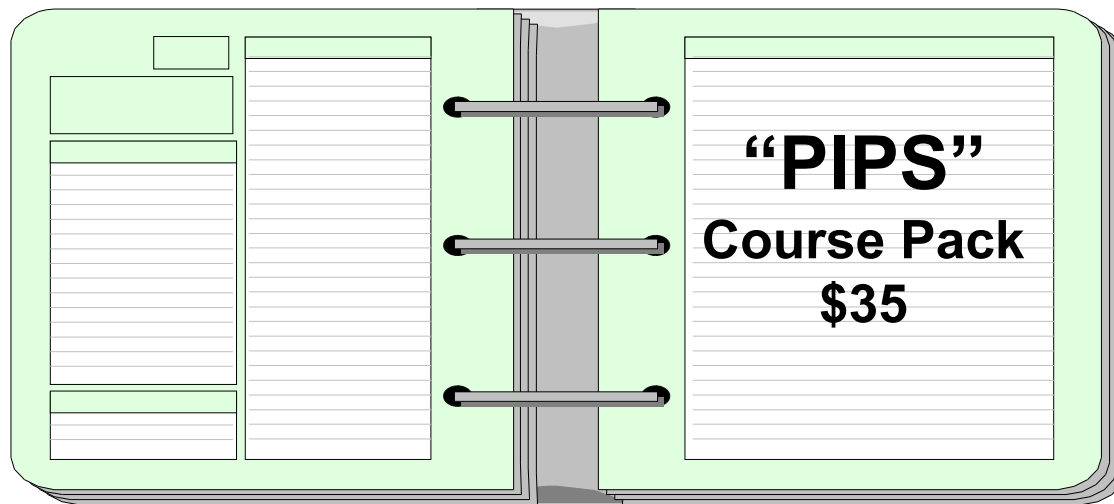


**Now here are some of my ideas  
about my expectations for Physics 2090Y....**

- 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 ....



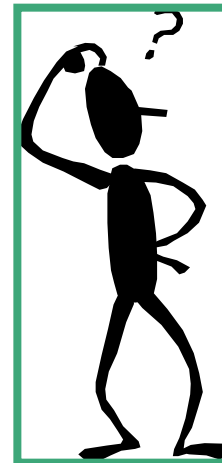
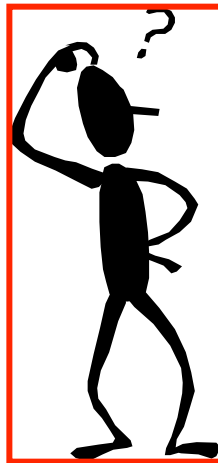
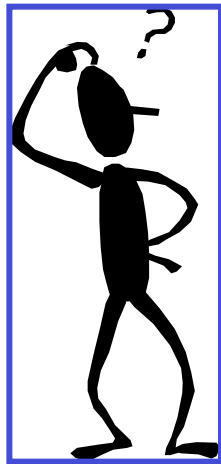
“PIPS” presents **Case Studies** that will ....

- clarify things you already know



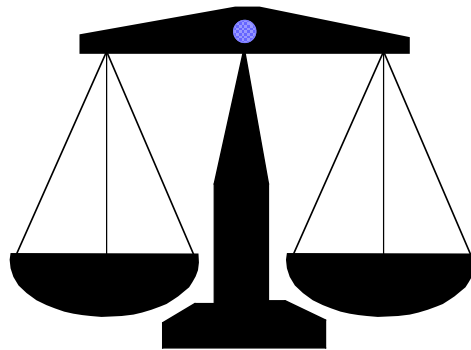
“PIPS” presents **Case Studies** that will ....

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



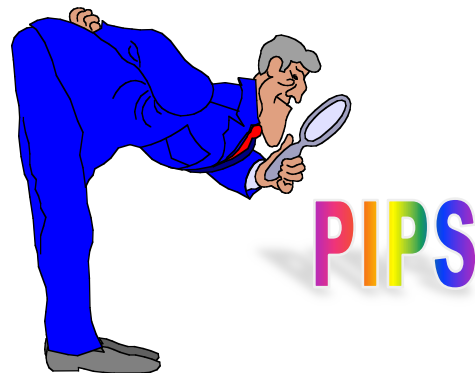
**“PIPS” presents Case Studies that will ....**

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



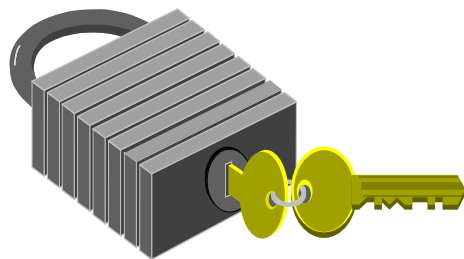
**“PIPS” presents Case Studies that will ....**

- **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**
- **reveal differences among the class**
- **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**



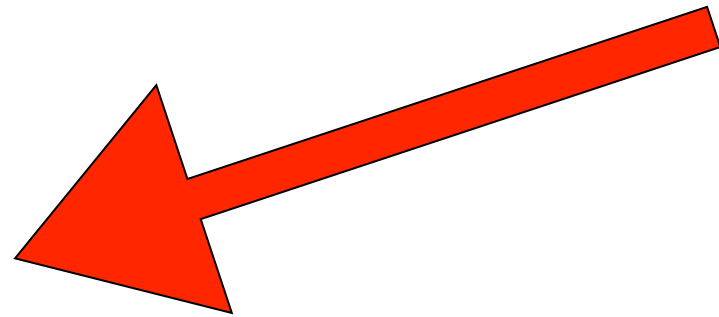
**Let's examine an example taken from.....**

- Light

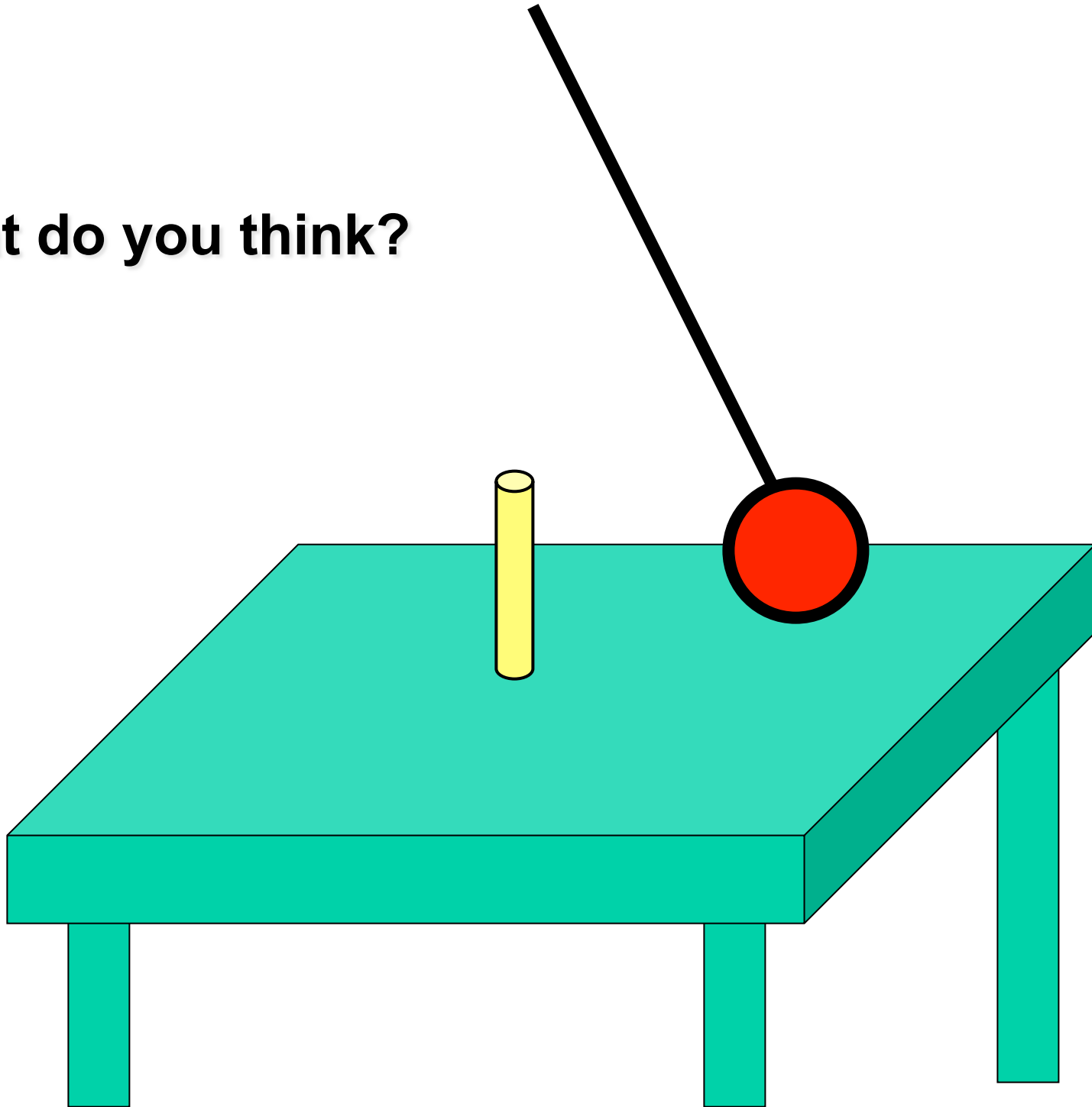
- Electricity

- **Motion**

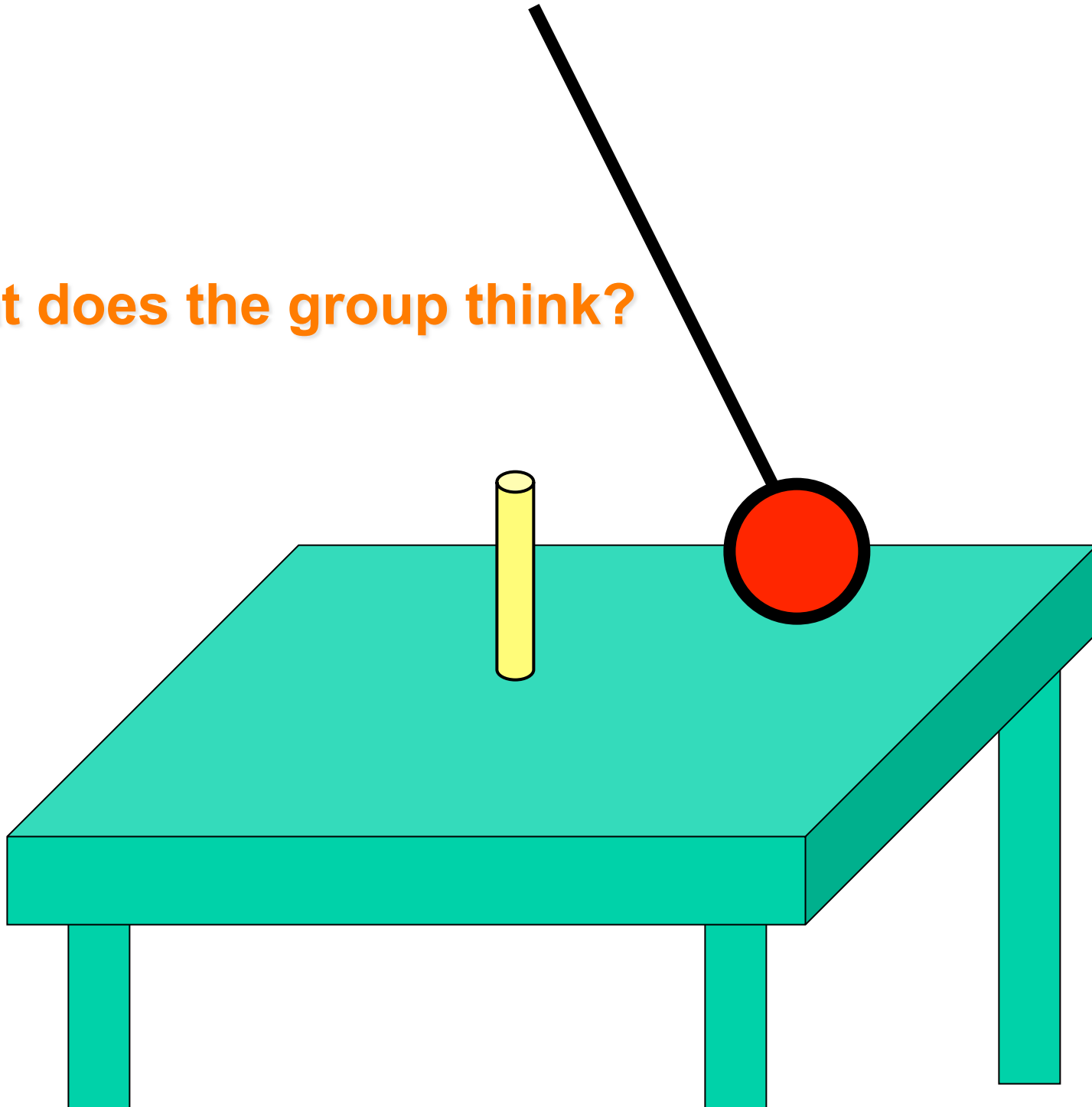
- Pulleys, Levers and Gears



**What do you think?**



What does the group think?

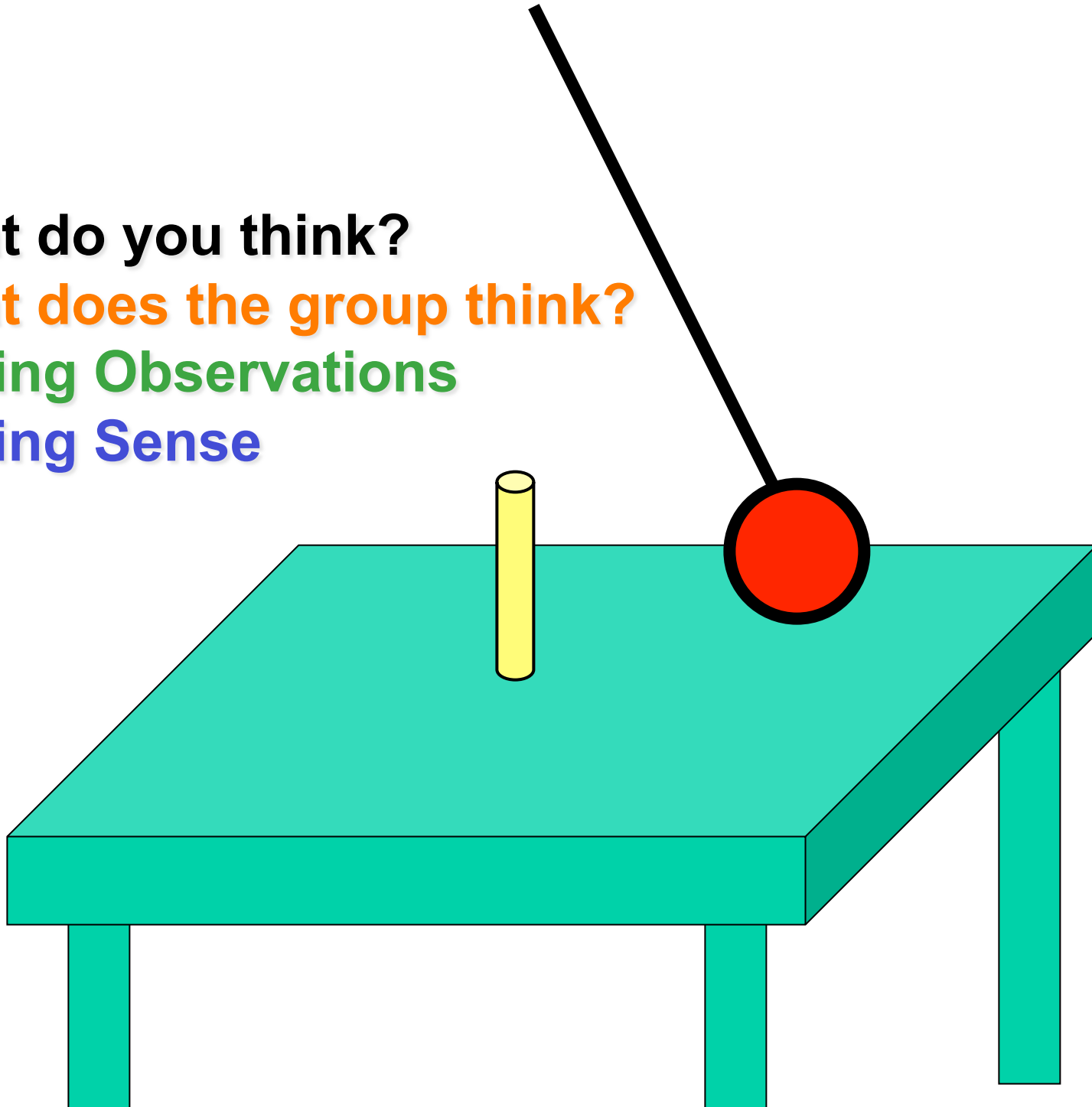


**What do you think?**

**What does the group think?**

**Making Observations**

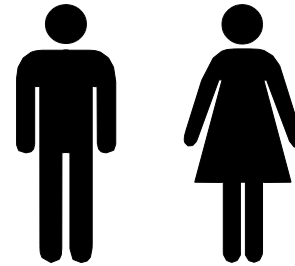
**Making Sense**





# Other aspects of Physics 2090Y...

- Journals



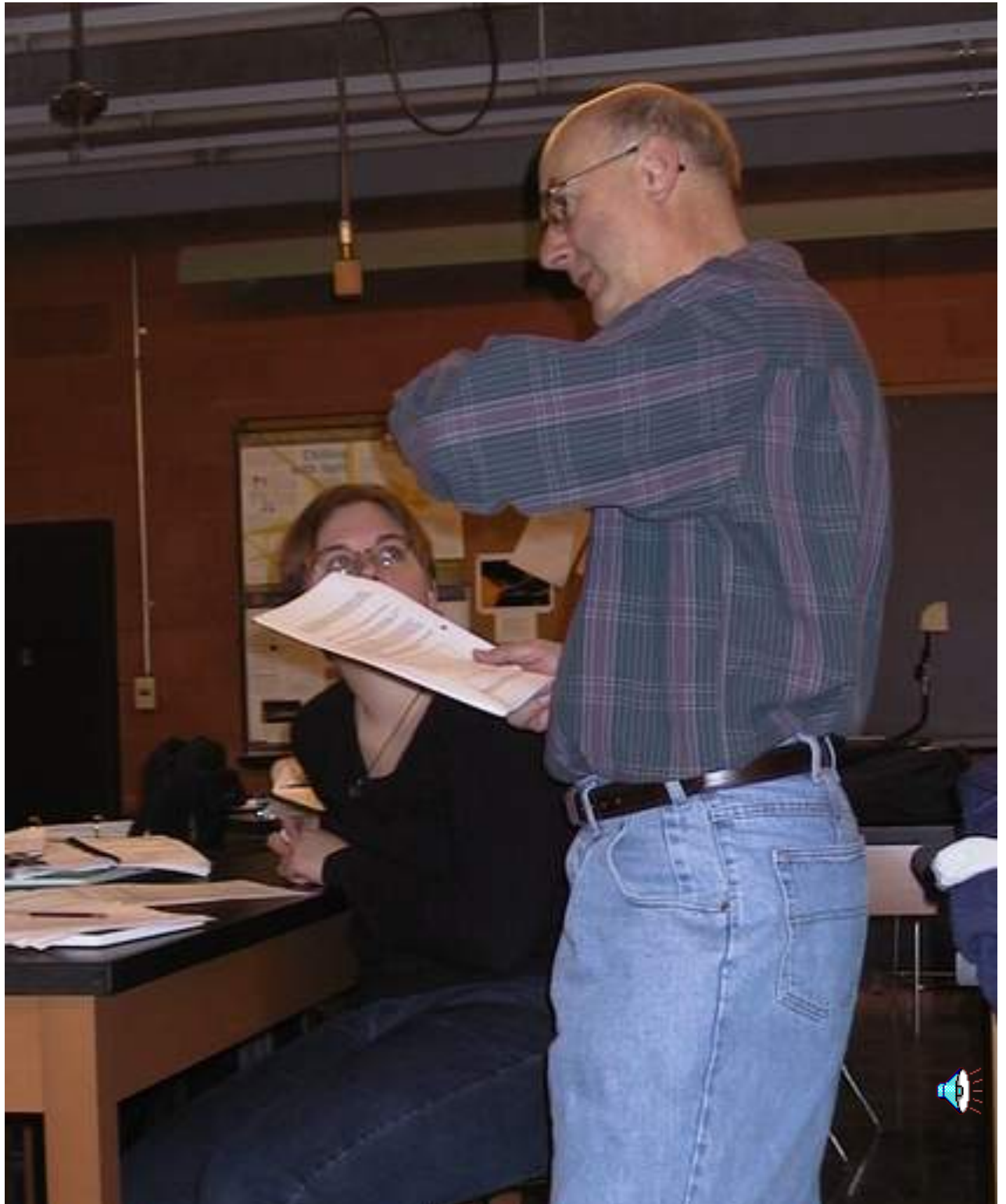
- Ontario's 1-8 Science Curriculum

- *How* we learn most effectively

- E-mail & other communications



**That's John  
Earnshaw  
facilitating  
someone's  
learning  
in the  
Physics 2090Y  
lab**





## **Your five tasks before the next class:**

**1) 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 five tasks before the next class:**

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**nb: If you wish to use another e-mail address, set your “trentu.ca” e-mail to be automatically forwarded.**

**If you had an account previously,  
but have not used it recently,  
you may have to logon to  
<http://www.trentu.ca/claimid>**



## **Your five tasks before the next class:**

- 1) Get your “trentu.ca” accounts activated and complete the myLearningSystem demographics survey.**
- 2) Upload a short computer file to myLearningSystem with a one sentence description of “constructivist learning” and the meaning of the word “pedagogy”.**



## **Your five tasks before the next class:**

- 1) Get your “trentu.ca” accounts activated and complete the myLearningSystem demographics survey.**
- 2) Upload a short computer file to myLearningSystem with a one sentence description of “constructivist learning” and the meaning of the word “pedagogy”.**
- 3) Send me a short e-mail message (under 100 words, with “Physics 2090Y 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.)**



## **Your five tasks before the next class:**

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- 3) Send me a short e-mail message from your trentu.ca email account introducing yourself, and telling me your expectations for the course.**
- 4) 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. )

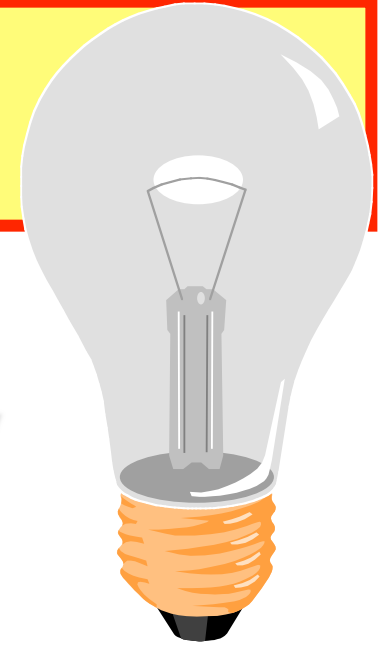


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- 3) Send me a short e-mail message from your trentu.ca email account introducing yourself, and telling me your expectations for the course.**
- 4) Post a message in the online class discussion forum.**
- 5) Bring \$35 to next class in room ESC 305:  
(You will be given a journal and a weekly PIPS course pack)**



# PHYSICS 2090Y...



“**constructivist learning**” by  
“**engaged interactions**”

Get your network ID at <http://www.trentu.ca/claimid>

My name is Johann Beda

My e-mail address is [jbeda@trentu.ca](mailto:jbeda@trentu.ca)

The course WEB page is at:

<http://www.trentu.ca/physics/jbeda/PHYS2090Y/>

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

