

# Drumming to The Beat of Different Marchers --

Giving Every Learner a  
REASONABLE Chance at  
Success!!

Presented by:  
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# Essential Eight

Name- \_\_\_\_\_

The purpose of this “get acquainted” activity is to start thinking about the different areas of intelligence. Participants are to mix freely and try to get seven different people to sign the blanks (each participant may sign her/his own sheet once). In order to record a name in the blank, the person signing must actually perform the task (not just say that she/he can do it).

Find Someone Who Can:

\_\_\_\_\_ recite a poem from memory.

\_\_\_\_\_ finish this numerical sequence:  
8,1,7,2,6,3,5, \_\_\_\_\_, and explain the logic behind it.

\_\_\_\_\_ with hands on head stand on one foot with eyes closed for at least 7 seconds.

\_\_\_\_\_ recall at least one dream from the last 3 weeks.

\_\_\_\_\_ hum the first line of *Silent Night* on key.

\_\_\_\_\_ tell 3 times they were very brave.

\_\_\_\_\_ name four very close friends in less than 15 seconds.

\_\_\_\_\_ Name 4 ways plants are different from animals.

## ESSENTIAL EIGHT



Name-

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### Find Someone Who Can:

\_\_\_\_\_ recite a poem from memory.

\_\_\_\_\_ finish this numerical sequence: 64, 1, 49, 4, 36, 9, 25 \_\_\_\_\_, and explain the logic behind it.

\_\_\_\_\_ within 30 seconds name 4 ways to sort rocks into categories.

\_\_\_\_\_ recall at least one dream from the last 3 weeks.

\_\_\_\_\_ with hands on head stand on one foot with eyes closed for at least 8 seconds.

\_\_\_\_\_ hum the first line of *Silent Night* on key.

\_\_\_\_\_ name 6 strengths or talents he/she has in less than 30 seconds.

\_\_\_\_\_ name five very close friends in less than 20 seconds.

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## Checklists for Assessing “How Students Are Smart”

Adapted by Debbie Silver

from *Multiple Intelligences in the Classroom* by Thomas Armstrong

Name of Student- \_\_\_\_\_

Check all the items that apply:

### Linguistic Intelligence (Word Smart)

- 1. Is a good reader.
- 2. Enjoys word games.
- 3. Is a good joke teller/ storyteller.
- 4. Has a good vocabulary for age.
- 5. Enjoys listening activities.
- 6. Likes to write stories and/or poems
- 7. Communicates with others in a highly verbal way.
- 8. Appreciates rhymes, puns, and/or nonsense words.
- 9. Has a good memory for words, stories, details.

Other linguistic strengths:

### Logical-Mathematical Intelligence (Number Smart)

- 1. Asks a lot of questions about how things work.
- 2. Has a good sense of cause and effect.
- 3. Finds math games interesting.
- 4. Can see and repeat patterns easily.
- 5. Enjoys working puzzles and brain teasers.
- 6. Understands computer programming.
- 7. Is a logical thinker.
- 8. Can estimate things involving numbers with relative ease.
- 9. Can work math concepts in head.

Other logical-mathematical strengths:

### Visual-Spatial Intelligence (Picture Smart)

- 1. Reports clear, visual images (or dreams).
- 2. Can envision objects from more than one perspective.
- 3. Daydreams more than peers.
- 4. Likes to draw and/or create art projects.
- 5. Has a good eye for detail and color.
- 6. Is good at spatial games like chess and Tetris.
- 7. Likes movies, slides, or other visual presentations.
- 8. Can move between 2-dimensional and 3 dimensional representations with ease.
- 9. Can read and/or create maps.

**Other visual-spatial strengths:**

**Bodily-Kinesthetic Intelligence (Body Smart)**

- 1. Is very coordinated.
- 2. Exceptionally mobile: moves, twitches, fidgets, taps when seated for long.
- 3. Enjoys working with clay, fingerpaint, and other tactile media.
- 4. Can mimic others' gestures, posture, and movements
- 5. Must touch anything new or interesting.
- 6. Loves to take things apart and put them back together.
- 7. Uses dramatic body movements for self-expression.
- 8. Enjoys running, hopping, climbing, wrestling, or similar activities.
- 9. Exhibits fine motor control (crafts, painting, etc.).

**Other bodily-kinesthetic strengths:**

**Musical Intelligence (Music Smart)**

- 1. Can detect music that is off-key, off-beat, or disturbing in some way.
- 2. Remembers melodies of songs.
- 3. Taps rhythmically as he/she works or plays.
- 4. Sensitive to environmental noise (rain on the windows, etc.).
- 5. Plays a musical instrument and/or sings in a choir.
- 6. Has a good singing voice.
- 7. Responds favorably when music is played.
- 8. Sings songs that he/she has learned.
- 9. Unconsciously hums much of the time.

**Other musical strengths:**

**Interpersonal Communications Intelligence (People Smart)**

- 1. Establishes meaningful peer relationships.
- 2. Seems to be a natural leader.
- 3. Empathizes with others.
- 4. Likes to play with others.
- 5. Shows good teamwork skills.
- 6. Others seek this student's company.
- 7. Has two or more close friends.
- 8. Frequently acts as a mediator and/or peace maker.
- 9. Enjoys teaching others.

**Other interpersonal communication strengths:**

### **Intra-personal Awareness Intelligence (Self Smart)**

- 1. Displays a sense of strong will.
- 2. Enjoys playing or working alone.
- 3. Has high self-esteem.
- 4. Has a good sense of self-direction.
- 5. Does not mind being different from others.
- 6. Has a realistic view of his/her strengths and weaknesses.
- 7. Is able to deal effectively with successes and failures.
- 8. Has an interest or talent that is not readily shared with others.
- 9. Seems to “march to the beat of a different drummer.”

### **Other intra-personal awareness strengths**

### **Naturalistic Intelligence (Nature Smart)**

- 1. Likes to identify and classify living and nonliving things in nature.
- 2. Cares for pets or animals.
- 3. Understands repeating patterns in nature and the universe.
- 4. Seems more “in tune with nature” than peers.
- 5. Would rather be outside than inside.
- 6. Has a demonstrated appreciation for a part of the natural world (i.e. dinosaurs, clouds, rocks, etc.)
- 7. Likes to garden and/or appreciates plants.
- 8. Understands and appreciates the environment.
- 9. Loves to collect things from nature.

### **Other naturalistic strengths**

## **Differentiating Instruction**

### **DIFFERENTIATING CONTENT:**

- 1. Use reading materials at varying readability levels.
- 2. Make text materials available through means other than just reading.
- 3. Present ideas through both auditory and visual means.
- 4. Use reading buddies. (Yes, in high school!)
- 5. Meet with small groups to re-teach an idea or skill for struggling learners or to extend the thinking or skills of advanced learners.

## Using Technology To Differentiate Instruction

### To Assess Students' Multiple Intelligences:

- Learning <http://www.chaminade.org/inspire/learnstl.html>
- The One and Only Surfaquarium-- <http://surfaquarium.com/MI/inventory.html>
- Kaliedoscope <http://www.ncwiseowl.org/kscope/>

### Verbal/Linguistic (Word Smart)

- Web Development tools -- sharing a poem, myth, legend, news article
- Word processing programs
- Multimedia authoring
- Story creation software ([www.fablevision.com](http://www.fablevision.com))
- CD-ROM interactive books, e-books, text to voice software
- **Create podcasts**
- Reading and interpreting web information
- <http://bubbl.us/>
- <http://voicethread.com>
- DORA- Diagnostic Online Reading Assessment
- The San Diego Quick Reading Assessment  
<http://webschool.wash.k12.ut.us/reading/inventory/sandiego.html>

### Logical Analytical/Math (Number Smart)

- Calculation tools
- Spreadsheets
- Graphing calculators
- Online data collection
- Science and math websites and software
- Problem solving websites and software
- The Futures Channel <http://www.thefutureschannel.com>

### Naturalist (Nature Smart)

- <http://www.plt.org>
- <http://www.projectwild.org>
- <http://www.projectwet.org>

### Bodily Kinesthetic (Body Smart)

- Video productions of skits, dances, etc.
- Video analysis of sports and dance moves
- Claymation -- sequence of movement
- Lego Logo and Robotics
- Joysticks, keyboards, and other devices for fine motor control
- Fitness software and interactive games (Wii Fit, etc.)

### **Visual Spatial (Picture Smart)**

- Pics for Learning
- WebQuest Projects
- Multimedia presentations
- [www.googlelittrips.com](http://www.googlelittrips.com)
- [www.fablevision.com](http://www.fablevision.com)
- Tom Synder's Timeliner
- Comic art
- Photoshop
- 3D and morphing software
- Scrapbooking, slideshows, clipart, charts, graphs, and tables
- Digital cameras
- Concept mapping tools and diagrams [http://www.text2mind](http://www.text2mind.com)
- [www.inspiration.com](http://www.inspiration.com)
- [www.kidspiration.com](http://www.kidspiration.com)

### **Musical (Music Smart)**

- Video and audio recording devices (digitalize music)
- Music clips
- Music generation software
- **Music composition software (Garage Band)**
- DVDs and CDs
- Music sharing sites
- [www.songsforteaching.com](http://www.songsforteaching.com)

### **Interpersonal Communication Skills (People Smart)**

- Blogs
- Listservs
- Webquests and collaborative elements
- Peer tutoring
- Social networking
- Collaborative computer software or games
- **Group presentations (PowerPoint/Keynote)**
- Tom Synder's Group Decision software
- Video conferencing

### **Intrapersonal Awareness (Self Smart)**

- **Blogs**
- **Computer-based journaling**
- Computer-based editing
- Multi-media portfolios
- Internet research (self-paced)
- Problem-solving software
- Individual video projects
- Virtual Worlds

# Cartesian Diver

## Introduction:

The Cartesian Diver was made popular in the 1800's by the philosopher Rene Descartes. It is commonly found in science classrooms or perhaps you have seen the *Diving Tony* toy distributed in boxes of Frosted Flakes. The Cartesian diver offers an eloquent demonstration of the most unique property of a gas, its compressibility.

## Materials:

- One 2-liter plastic bottle with cap
- One glass eyedropper

## Procedure:

- 1) Fill the bottle with water.
- 2) Fill a glass with water.
- 3) Draw water into the dropper until it is 2/3 full.
- 4) Place the dropper into the glass of water. If it sinks, adjust the water level until the dropper floats.
- 5) Place the dropper into the 2-liter bottle and screw the cap tightly in place.

## Activity:

Hold the bottle in one hand and squeeze. What do you observe? Release the pressure with your hand and observe again.

## Questions:

### **Why does the dropper sink when you apply pressure to the bottle?**

As you squeeze the bottle the pressure inside increases. Liquids are not compressible but gases are. Therefore, the air in the dropper compresses and allows more water to flow into the dropper. This increases the weight of the dropper. As the weight increases, the density increases until it becomes greater than the density of water. Objects that have a density greater than water will sink.

### **Why are gases compressible and liquids not?**

In gases the molecules are very far apart compared to their size. In other words, gases are mostly empty space. When put under increased pressure, the gas molecules can move closer together and the gas will occupy less volume.

On the other hands, in liquids the molecules are already crowded very close together. Since there is no empty space between the molecules, an increase in pressure cannot cause a decrease in volume.

# Remote Control Cartesian Diver

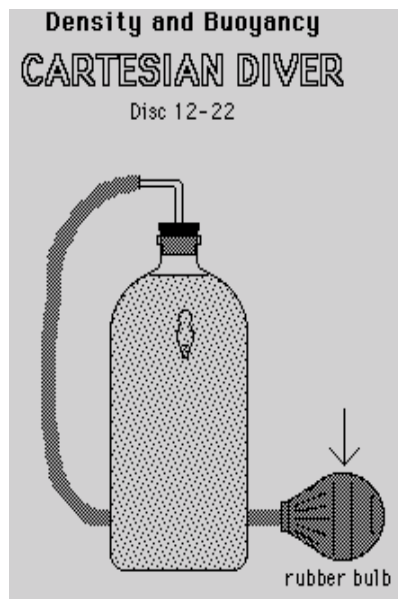
By Dr. Bill Deese, Louisiana Tech University

You can amaze your students by operating your Cartesian Diver by "remote control." Start with the standard Cartesian Diver set-up. Drill a hole in the bottle top just large enough to accommodate a piece of aquarium tubing. Use another bottle (any size, but smaller is usually more convenient). Drill a hole in its cap also large enough to accommodate the aquarium tubing. Fill the second bottle with water and insert a piece of aquarium tubing 3 or more feet long inside each bottle.

By squeezing the small bottle, you will increase the pressure in it. The increased pressure in the small bottle will result in an identical increase in pressure in the large bottle, thus sending the Cartesian Diver to the bottom of the large bottle by a "remote control" device.

Some sneaky teachers we know even hide the "remote control" so that they can seemingly command the Cartesian Diver to dive by voice control alone. We highly recommend this procedure! It really causes the students to think about what is happening.

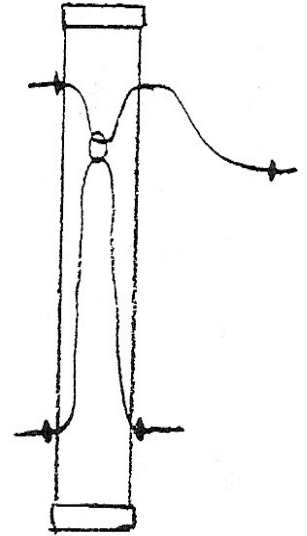
This activity demonstrates the principle that pressure is the same throughout a fluid.



## Critical Thinking and the Magic Tube

By William Deese  
Louisiana Tech University

**Description:** A large cylinder with cords protruding from four holes is shown to the audience. When each cord is pulled, sometimes surprising results are obtained. The audience is challenged to explain how the magic tube is constructed.



**Materials:** 2-foot section of 2-inch PVC pipe  
(2) 2-inch caps for the PVC pipe  
7-foot section of 1/4-inch cord  
(1) 1-inch metal ring

### Construction:

- 1) Drill a 1/4 inch hole in the tube 3 inches from one end. Rotate the tube 180 degrees and drill another hole exactly opposite to the first one.
- 2) Drill two holes at the other end in analogous positions.
- 3) Cut the cord into 4-foot and 3-foot lengths.
- 4) Thread the 4-foot cord through a hole, through the metal ring, and out the hole on the opposite side.
- 5) Tie knots near each end of the cord.
- 6) Position the ring in line with the holes at the other end of the tube and thread the 3-foot cord through both holes and the ring.
- 7) Tie knots about 3 inches from each end of the second cord.
- 8) Pull one end of the long cord out and cut about 12 inches off. Tie knots about 3 inches from each end.

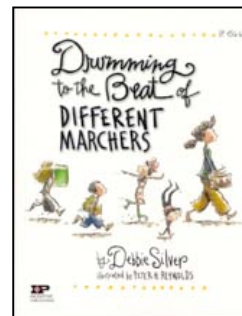
### Procedure:

- 1) Display the magic tube to your audience and pull one of the Cords. Then pull the end exactly opposite the first one you pulled.
- 2) Now pull one of the cords at the other end and observe.
- 3) Continue to pull various ends of the cords while your audience tries to figure out how the magic tube works.
- 4) If your audience is a class, ask them to design their own tubes. There may be more than one design that works.

**Hazards:** Be careful when drilling the holes in the PVC pipe.

**Reference:** A hand-out by Bruce Hogue, Dustan Middle School

LIST OF RELATED CITATIONS  
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DR. DEBBIE SILVER



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**Coming Soon:**

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