

# **HOW THINGS WORK**

**Music by Joseph Seserko**  
**Book & Lyrics by Ellen Cooper**

# HTW CAST

## **STUDENTS**

## **SCIENTISTS**

**ALBERT EINSTEIN**

**HYPATIA**

**ARCHIMEDES**

**SIR ISAAC NEWTON**

**LEONARDO da VINCI**

**GALILEO**

**MADAM CURIE**

**PIERRE CURIE**

**ORVILLE WRIGHT**

**WILBER WRIGHT**

**MOTHER NATURE**

**MARIA MITCHELL**

## **OTHER CHARACTERS**

**MS. BLANKENSOP**

**MR. BLOOMERS**

**ALIEN #1**

**ALIEN #2**

**TRASHMEN**

**GUY FELLA**

## **SET**

Very simple unit set. Mathematical equations and scientific formulas are painted on the set unit. Shifting locale is indicated through lighting, music and minimal set pieces. A few props are necessary; a simple ramp, Trash Men's shipping cart filled with rusty old gadgets, and T.V. Student's science projects may be imaginary or not.

Music - Piano, synthesizer, drums

# HOW THINGS WORK

## SCENE ONE

A science classroom, with a periodical chart, a mobile of the planets in our solar system and a cardboard cut-out of the Energy of Conservation as an action figure. Ms. Blankensop, a wild and zany science teacher suddenly shouts.

**MS. BLANKENSOP** *(shouts)*  
**Eureeeeeeeeeeeka!**  
*(She turns to the class)*  
**And that, boys and girls, is how Archimedes discovered the theory of flotation!**  
*(Mr. Bloomers, the school principal, enters)*

**MR. BLOOMERS** Is everything alright, Ms. Blankensop?

**MS. BLANKENSOP** Splendid! Just demonstrating the theory of flotation, Mr. Bloomers.

**MR. BLOOMERS** *(chuckles approvingly)*  
Carry on.

**MS. BLANKENSOP** Alright class, I want you to all complete your homework on the three great scientists we have been studying, Hypatia, Archimedes and Albert Einstein. And don't forget, your science projects are due tomorrow at nine! The winner will go to the state and perhaps win a prize just like our wonderful Conservation Energy exhibit last year.  
*(She and Mr. Bloomers exit.)*

**STUDENT 1** I Bet old Archimedes never had to do any dumb old home work.

**STUDENT 2** Yeah, well I bet Hypatia was the smartest in her whole class.

**STUDENT 3** She was not, I read she didn't even get a scholarship! Anyhow Einstein is the smartest in the whole world.

**STUDENT 4** *(sniffs/tosses her head)*  
I'm sure Hypatia could have figured out  $E=mc^2$

**STUDENT 1**                                    **No way! Girls can't go fission!**

**STUDENT 2**                                    **Can so!**

**STUDENT 3**                                    **Can not!**

**STUDENT 4**                                    **Dweeb!**

**STUDENT 1**                                    **Jerk!**  
*(All glare eye to eye.)*

**STUDENT 2**                                    **C'mon we better finish our projects!**

**C'mon everyone. C'MON! We have to finish our projects!**

**STUDENT 3**                                    *(Yell back)*  
**Wait til you see...I'm going to build the biggest baddest nuclear robo laser transformer you've ever seen!**

**MS. BLANKENSOP**                                    *(Looks in)*  
**I MEAN IT CLASS, AT 9 AM SHARP ALL SCIENCE PROJECTS MUST BE ON MY DESK!**  
*(Ms. Blankensop exits.)*

**GIRLS**    *(yell)*  
**C'mon!**  
*(music rises.)*

**SONG: "THIS PROJECT"**

*(One group of students steps forward)*

**STUDENT 5**                                    **We have been studying the chapter on electricity.**

**STUDENT 6**                                    **Electricity comes from electrons which are so tiny that if a million electrons were lined up they would scarcely cross the head of a pin.**

**STUDENT 7**                                    **Ladies and Gentlemen, the never-to-be-seen-ever before, our incredible, inedible science project,**

**STUDENT 8**                                    **The Electrical Current Stabilizer!**

*(They create a machine.)*

**Each switch is connected by two sets of wires.**

**ALL**

**Ooooooh!**

**STUDENT 9**

**The circuit will break if the current goes higher**

**ALL**

**Ahhhh.**

**STUDENT 10**

**For added protection there's a link to the ground.**

**ALL**

**Geeee!**

**STUDENT 5**

**So in case of a problem we'll still be around.**

**Presenting our completely wondrous and absolutely fun thing-a-ma-jig.**

**STUDENT 6**

**But what does it cause?**

**STUDENT 7**

**Well...**

**STUDENT 8**

**What makes it run?**

**STUDENT 9**

**You see...**

**STUDENT 10**

**How does it work?**

**STUDENT 5**

**I...**

**STUDENT 6**

**Why is it fun?**

**STUDENT 7**

**Well...it...uh**

*(Next group of students steps in front.)*

**STUDENT 8**

**Attention everyone. Presenting the greatest experiment ever dreamed up by a science student in the history of well...science!**

**STUDENT 9**

**We have been studying the mechanics of movement, in other words, machines with parts that move, such as gears, belts, wheels and springs.**



**so they move faster and faster.**

**STUDENT 7**

**As we shall see, the atom unleashes the most powerful and dangerous energy of all.**

**STUDENT 8**

**And now ladies and gentlemen, hold on to your seats because you are about to see the experiment you've all been waiting for...our phenomenal, sensational, spectacular, science project.**  
*(They create a machine.)*

**STUDENT 9**

**Ta dah! Here right before you is a reactor.**

**ALL**

**Ooooh!**

**STUDENT 10**

**We made it from scratch and it's radioactive.**

**ALL**

**Aaaaah!**  
*(They get ready to pull the switch.)*

**STUDENT 5**

**It's the one kind of outcome where energy's made**

**ALL**

**Whoaaaa!**

**STUDENT 6**

**I will demonstrate how 'cause it's perfectly safe.**

**ALL**

**Noooooo!**  
*(Student pulls the switch and there is a tremendous explosion. The students tumble through time and space.)*

**END OF SCENE I**

## SCENE TWO

The students awaken and stare at Albert Einstein who is busily scribbling equations all over a black board and muttering to himself.)

**STUDENT 1** (whispers)  
**Hey!**  
(He gestures to Einstein.)

**STUDENT 2** **Omigosh! Is that who I think it is?**

**STUDENT 3** **Yes.**

**STUDENT 4** **Albert Einstein?**

**STUDENT 1** **Genius!**

**STUDENT 2** **How did he...I mean how did we...get here?**

**STUDENT 3** **Explosion?**

**ALBERT EINSTEIN** (*mutters*)  
**A light beam passing through the gravitational field of the sun would be deflected by about...**

**STUDENT 4** **Well we should like, ask him where we are.**

**STUDENT 1** **Great idea!**

**STUDENT 2** (*hisses*)  
**Wait a minute...you ask him. Besides, you're the one who said girls can't go fission!**

**STUDENT 3** **How was I supposed to know?**

**STUDENT 4** **What do we say to him. S'cuse me but we just kinda landed here?**

**ALBERT EINSTEIN** (even louder)  
**Matter must move through this curved space...**

**STUDENT 1** **Good plan!**  
(*gives an encouraging shove until standing right in front*)

*of Einstein.)*

**STUDENT 2**

**Uh...s'cuse me Mr. Einstein?**

**ALBERT EINSTEIN**

*(preoccupied)*

**Yes, yes, yes. Not now, not now.**

*(He makes a note and declares.)*

**Ah ha! Just as I thought!**

**STUDENT 3**

**Dr. Einstein...**

**ALBERT EINSTEIN**

*(impatiently)*

**What-is-it?!?**

**STUDENT 4**

**Well I, I mean we, have kind of just like arrived here.**

**ALBERT EINSTEIN**

**Ha! Spies! From the institute I bet. Now where was I...where was I? Ah yes, curvature of space...**

*(student turns to others and frantically gestures for them to speak up.)*

**STUDENT 1**

**Uh...what we mean Sir, is that we are students and we don't exactly come from here.**

*(Albert Einstein stops writing and turns around.)*

**ALBERT EINSTEIN**

*(cries)*

**STUDENTS! Now where do you say you come from?**

**STUDENT 2**

**We were working on our science projects for school...on earth...in 2004 and we kind of like blew up...**

**STUDENT 3**

*(sarcastic)*

**Kind of!**

**STUDENT 4**

*(glaring at her)*

**And like here we are.**

**ALBERT EINSTEIN**

**But that's impossible, you would have to travel faster than the speed of light.**



**STUDENT 2** It's like when we look really far into space, at a distant star, we could be looking back a million years in time.

**ALBERT EINSTEIN** Exactly.

**STUDENT 3** In other works it's like we took a very fast subway.

**ALBERT EINSTEIN** In effect.

**STUDENT 4** And this occurs because time and space reverse their roles inside the event.

**ALBERT EINSTEIN** *(mopping his brow)*  
Yes.

**STUDENT 1** And the entire trip took only a few seconds?

**ALBERT EINSTEIN** It appears so.

**ALL** Wow.

*(Music rises)*

**SONG: "WE JUST MET ALBERT EINSTEIN"**

*(Music fades.)*

**STUDENT 5** In other words, we can move anywhere we want to in space!

**ALBERT EINSTEIN** With one exception.

**STUDENT 6** Backwards.

**ALBERT EINSTEIN** Yes.

**STUDENT 7** Oh dear.

**END OF SCENE 2**

## SCENE THREE

Albert Einstein resumes writing equations on the board and muttering to himself while the students continue to argue.

**STUDENT 8**

**Ask him how to get back!**

**STUDENT 9**

**He just said he didn't know how.**

**STUDENT 10**

**He's Albert Einstein, and he's got to know a way back!**

**STUDENT 5**

**Ok. Ok.**

*(He taps Albert Einstein on the shoulder casual like.)*

**So...if we're not in our own universe, where exactly are we?**

**ALBERT EINSTEIN**

**Interesting question young man, very Interesting. In fact, a first rate question!**

*(pause)*

**I'm not sure.**

**STUDENT 6**

**What do you mean you're not sure?**

**ALBERT EINSTEIN**

**You see, that's what I've been trying to work out, or work on when you interrupted me. But somehow we all ended up here.**

**STUDENT 7**

**What do you mean by "we"?**

*(The glorious sound of trumpets rise.)*

**ALBERT EINSTEIN**

**Ah the celebration is about to begin.**

**STUDENT 8**

**Celebration? What celebration?**

**ALBERT EINSTEIN**

**It happens every one hundred years or so.**

**Recognition of all the great scientific achievements.**

**A giant show and tell if you ask me. But certainly no one does.**

*(Trumpets sound again.)*

**Here they come!**

*(Music rises as all of the scientists enter. They proceed one by one down the center stage like models in a*

*'catwalk' as Albert Einstein introduces them.)*

**Here comes the great Archimedes, the Ancient Greek Scientist who first defined the principles of levers.**

*(Archimedes joins Albert Einstein and the students. The students nudge one another and stare in amazement.)*

**STUDENT 9**

*(whispers)*

**Hey, that's Hypatia!**

**STUDENT 10**

**I know!**

*(All turn in same direction, as Albert Einstein announces the other scientists.)*

**ALBERT EINSTEIN**

**The brilliant Leonardo da Vinci!**

**ARCHIMEDES**

*(Whispering loudly for all to hear)*

**Still trying to perfect his odometer. Takes Leonardo forever.**

**ALBERT EINSTEIN**

**Shhhh.**

**ARCHIMEDES**

*(makes the crazy)*

**A bicycle that won't turn, a ship that goes under water. I don't know how he got in here!**

**ALBERT EINSTEIN**

*(to students)*

**They've been fighting for years, but mark my words, Leonardo is a genius. Ah, the brave and splendid Galileo. He was charged with treason when he claimed the earth actually moved around the sun and was not the center of the solar system.**

**HYPATIA**

**But even while crawling on his knees in front of his accusers he cried,**

**ALL**

**"It moves!"**

*(Wilbur and Orville Wright enter)*

**ALBERT EINSTEIN**

**Wilber and Orville Wright from Dayton, Ohio, who successfully launched the first airplane in history...**

**Marcia Mitchell, from the early eighteenth hundreds,  
considered to be the first female astronomer...**

*(Madam and Pierre Curie enter coughing and wheezing,  
leaning on canes.)*

**The courageous couple Madam and Pierre Curie.  
Fantastic people. They were awarded the Nobel  
prize for their work on radioactivity.**

*(They smile and weakly wave.)*

**STUDENT 5**

**They don't look so hot.**

**ALBERT EINSTEIN**

**Side effects.**

*(The Curies toss their canes into the wings as the music  
rises.)*

**SONG: "WE ARE THE SCIENTISTS OF TIME GONE BY"**

**ALBERT EINSTEIN**

**Dear scientists, allow me to introduce some  
students from the 21st century, who have  
arrived here unexpectedly, and seem to be having some  
difficulty with their science projects.**

**STUDENT 6**

**Try disaster.**

**STUDENT 7**

**Try total disaster!**

**HYPATIA**

**Why don't we give them some help?**

*(She turns to the others.)*

**We could you know.**

**ARCHIMEDES**

**Yes, some inspiration!!**

**ALBERT EINSTEIN**

**Start at the beginning?**

**HYPATIA**

**Thunder and lightning!**



*hard hats consulting blueprints.)*

**ALIEN #1**                      **Glick bluecoff yuck zimlikf!**

**ALIEN #2**                      **Blimeth zoo meck blee yodo!**

**ALIEN #1**                      **Yodo muck zoo blimeth?**

**ALIEN #2**                      **Zim doc yuck slew.**

**ALIEN #1**                      **Dimmo zim yuck muck yodo!**

**ALIEN #2**                      **No, zim doc yuck slew...slew!!**

**ALIEN #1**                      **Dado?**

**ALIEN #2**                      **Dado.**

*(Aliens shake hands.)*

**MARIA MITCHELL**            **But that my friends was only the beginning!**

*(Music rises.)*

**SONG: "HOW THINGS WORK"**

**WRIGHT BROTHERS**

**A flying machine**

**ARCHIMEDES**

**The screw and the lever**

**CURIUS**

**Plutonium ore**

*(Cont of SONG: "HOW THINGS WORK")*

**GALILEO**

**A telescope**

**MARIA MITCHELL**

**Yes, the telescope**

**LEONARDO DA VINCI**

**A submarine**

**HYPATIA**

**An astrolabe**

**ALBERT EINSTEIN**

**To devise whatever we need!**

**LEONARDO DA VINCI**

**Machines that talk**

**HYPATIA**

**Machines that move**

**WILBUR WRIGHT**

**That do whatever**

**MADAM CURIE**

**We want them to**

**STUDENT 8**

**Wow, this is amazing!**

**ARCHIMEDES**

**It's amazing, it's all wondrous, it's all splendid, all the work being done in the glorious wonderful name of science!**

*(sing)*

**Raising a boulder or**

**Lifting a cow or**

**Hefting a dragon**

**Is nothing at all**

**Pushing a wagon or**

**Pulling a plow**

*(Cont of SONG: "HOW THINGS WORK")*

**Driving a hammer or**

**Hoisting a sail**

**It's how things work**

**With levers and gears**

**And belts and wheels**

**And cams and cranks and springs**

*(repeats)*

**If you find the way**

**To use the ramp**

**To ply the lever**

**To turn the wheel**

**To do whatever**

**You must reveal**

**To find the meaning**

**To gain the reason**

**To seek the essence**

**Of how things work**

**With levers and gears**

**And belts and wheels**

**And cams and cranks and springs**

*(repeats)*

**It's how things work!**

**HYPATIA**

**A device to measure Mars**

**MARIA MITCHELL**

**A means to count the stars**

**PIERRE CURIE**

**A way to find out once and for all**

**ALL**

**Exactly where we are!**

*(break/Albert Einstein speaks)*

**ALBERT EINSTEIN**

**And where precisely is that dear friends?**

**LEONARDO DA VINCI**

**Well according to my calculations it's uh...uh...you tell them Hypatia!**

**HYPATIA**

**Well according to my astrolabe, we're exactly three degrees...uh...huh Galileo, you explain**

## GALILEO

Well you see, right here, according to my measurements...

*(He unrolls his measurements and scratches his head.)*

**I don't know!**

*(Students react in surprise...)*

**(END OF SCENE)**

## SCENE FOUR

*(Maria Mitchell brings out a telescope.)*

**MARIA MITCHELL**                      **Perhaps we can find out from the stars.**

**STUDENT 5**                              **What do you mean?**

**MARIA MITCHELL**                      **Sometimes it's possible to determine location in relation to the stars and the speed of light.**

**STUDENT 6**                              **Wow.**

**MARIA MITCHELL**                      **Within our own galaxy, the Milky Way, there are 400 billion stars. More stars exist in the universe than all the grains of sand on earth.**  
*(She peers into the telescope.)*

**STUDENT 7**                              *(Peers into the telescope)*  
**That's so neat!**

*(Music rises as Maria Mitchell closes her eyes.)*

**ALBERT EINSTEIN**                      **Listen.**  
**STUDENT 8**                              **To what?**

**MARIA MITCHELL**                      *(spreading her arms wide)*  
**The universe.**

**SONG: "WHERE ARE WE GOING"**

*(Music continues underneath.)*

**MARIA MITCHELL**

**Can you hear it now?**

*(The students gaze up into the sky.)*

**STUDENT 9**

**I wonder if there is life in other solar systems...**

**STUDENT 10**

**I wonder what our world will become in a few million years...**

**STUDENT 5**

**I wonder if we will ever explore other galaxies...**

**STUDENT 6**

**I wonder if anyone else knows we exist...**

**MARIA MITCHELL**

*(smiles)*

**Yes...you're listening.**

*(Suddenly there is a tremendous crash of thunder and a flash of lightening. Sounds of the natural world rise becoming louder and louder until they are almost deafening.)*

**STUDENT 7**

*(shouts)*

**Who is that!**

**ALBERT EINSTEIN**

*(shouts back)*

**The greatest scientist of them all...Mother Nature!**

*(music swells and fades as Sir Isaac Newton enters very distressed.)*

**SIR ISAAC NEWTON**

**Has anyone seen her!**

**STUDENT 8**

*(amazed)*

**Sir Isaac Newton? Wow!**

**ALBERT EINSTEIN**

**Seen her?**

**SIR ISAAC NEWTON**

**Yes! Have you seen her!**

**ALBERT EINSTEIN**

**For heaven sakes seen who?**

**SIR ISAAC NEWTON**

**You know...Mother Nature!**

**ALBERT EINSTEIN**

**Oh, Mother Nature.**  
*(aside to students)* **He hates Mother Nature.**  
**Well she was here only a moment ago.**

*(Sir Isaac Newton jumps up and down.)*

**SIR ISAAC NEWTON**

**Drat drat drat drat drat drat! That blasted woman!**  
**She's going to ruin the celebration. I've got to find her!**

**STUDENT 9**

**Why is she going to ruin the celebration?**

**ALBERT EINSTEIN**

*(holding his head)*  
**Please don't ask.**

**SIR ISAAC NEWTON**

**Because she doesn't understand how things work.**

**STUDENT 10**

**How what things work?**

**SIR ISAAC NEWTON**

*(wails)*  
**How anything works! Anything at all that matters!**

**ALBERT EINSTEIN**

*(wagging his finger)*  
**Your blood pressure Sir Isaac.**

**SIR ISAAC NEWTON**

**Never mind my blood pressure. I have got to find her!**

**ALBERT EINSTEIN**

**All you have to do is look around you Sir Isaac**  
*(He stretches out his arms.)*  
**Here she is.**

**SIR ISAAC NEWTON**

**That's exactly my point, she's everywhere and no where at all. She ruins EVERYTHING!**

*(Music rises.)*

**SONG: "I HATE MOTHER NATURE"**

*(A crash of thunder and blaze of lightening and deafening natural sounds rise as Mother Nature appears. She bites into an apple and smiles at Sir Isaac Newton.)*

**MOTHER NATURE**                      **How things work!**

**STUDENTS**                              **Wow!**

**MOTHER NATURE**                      **How do they not! You make it sound so wonderful, so fantastic. Like everything is moving along like clockwork! That technology is the answer to every thing. Why, you haven't even figured out HOW to cure the common cold!**

**SIR ISAAC NEWTON**                      **Now listen here Mother...**

**MOTHER NATURE**                      *(furious)*  
**You are acting like these are harmless little experiments, little pop explosions.**

**SIR ISAAC NEWTON**                      *(huffily)*  
**It's nothing that can't be fixed with a little science.**

**MOTHER NATURE**                      **There you go again!**

**ALBERT EINSTEIN**                      **Look, Mother, give us a little breathing room.**

**MOTHER NATURE**                      **Global warming, toxic waste, nuclear weapons, ozone depletion, deforestation, pollution, not to mention....cell phones! And you want breathing room?!? I think your science has done quite enough, thank you.**

**STUDENT 5**                                **It's true.**

**STUDENT 6**                                **There are some problems.**

**STUDENT 7**                                **And some complications.**

**STUDENT 8**                                **The world is somewhat out of balance.**

**STUDENT 9**                                **She has got a point.**

**SIR ISAAC NEWTON**                      *(shaking his fist)*  
**Got a point? Every hundred years she spoils this celebration. Every single time! That woman has absolutely no sense of humor!**

**MOTHER NATURE**

*(Mother Nature raises her arms, the light begins to flicker.)*  
**I'd like you to meet some examples of your 21st  
Century science...**

*(“Trash Men” enter pulling a huge shopping cart of  
“treasures” from a gadget crazy society.)*

**Trashman #1**

**Use it up and toss it away  
We've got enough--no need to save  
Why conserve when you can pay and pay and pay  
Why not use it all today**

**Trashman #2**

**Use it up then throw it away.  
We've got enough right here--so say**

**Trashman #3**

**Why the worry, why the frown  
Has toxic waste pollution got you down...heh heh heh heh**

*(They continue humming to themselves while digging through  
the cart. Student steps up to them.)*

**TRASHMAN #1**

*(digging into his cart)*  
**Ah, a 12-watt...receiver unit.**  
*(He bites it and puts it in his.)*

**TRASHMAN #2**

**Hmmmm...a satellite dish...use it up and throw it  
away.**

**TRASHMAN #3**

**An iPod...hmmm.**  
*(Trash Men look up startled and see them.)*

**STUDENT 10**

**Who are they?**

**TRASHMEN**

*(They throw open their arms.)*  
**Isn't it beautiful!**

*(Music rises.)*

**SONG: “BECAUSE THERE’S TRASH MAN”**

*(Music continues underneath as the students hunt for treasures.)*

**STUDENT 5**

**Some of this stuff is rad man**

**STUDENT 6**

**Hey a TV**

**TRASH MEN**

**Not so fast...It's time for our favorite nature show...**

**(END OF SCENE)**

## **SCENE FIVE**

*(Music rises for the show "WHO INVENTED THAT!" Lights come up swiftly as Guy Fella, the Host of the show, bounds downstage.)*

**GUY FELLA**

**Good evening and welcome again to "WHO INVENTED THAT!" My name is Guy Fella and tonight we have a special treat with our many Wonderful guests. From ancient Greece that wonderful inventor, scientist, physicist and all around great guy, Arrr...chimedes!**

*(Archimedes enters and takes a bow.)*

**From Alexandria, that center of culture and scientific discovery, the woman who risked her life for the sake of science, mathematician, astronomer and philosopher, it's Hy.....patia!!!!**

*(Hypatia enters and takes a bow. Guy Fella checks his notes.)*

**GUY FELLA**

**Now let's welcome from the British Isles...Sir Isaac Newton!**

*(Sir Isaac Newton enters and takes a bow.)*

**From Pisa, Italy. The man who proved the earth**

**revolved around that big energy ball in the sky and all-around-fun-in-the-sun-guy...Gal...li...leo!**

*(Galileo enters and takes a bow.)*

**From Pa-ris France! Those radioactive wonders! Madam and Pierre Curie!**

*(Curie enters and takes a bow.)*

**From Nantucket, Massachusettes, the brillante star-gazer with 20-20 vision...Maria Mitchell!!!!!!**

**GUY FELLA (cont)**

**From Tuscany, Italy, that crazy painter/sculptor/musician/inventor, Leonardo “what can’t he do” Da Vinci!**

*(Leonardo enters and takes a bow.)*

**From Dayton, Ohio, two brothers whose feet refuse to touch the ground! The Wright brothers!**

*(Wright brothers enter flying, take a bow.)*

**And finally, from...well...heh, heh, heh, I guess every where it’s everyone’s favorite Mother, the woman with the green thumb and energy to spare. Let’s hear it for Mother...Nature!**

*(Mother Nature enters and takes a bow.)*

**MOTHER NATURE**

**Thanks Guy.**

**GUY FELLA**

**Welcome to all of you. And now let’s say hello to our science student contestants!**

*(They enter looking a little dazed.)*

**Now, the way we play this game is I will give you a clue which is actually a scientific principle. Our panel of scientists will then try to explain this principle to the best of their abilities. It is your job to tell the audience “Who invented that.”**

**Contestants, are you ready to play “WHO INVENTED THAT!”**

**STUDENT 7** *(Looking around nervously)*  
**Yeah, whatever.**

**STUDENT 8** **I guess so Guy.**

**GUY FELLA** **And if you’re correct you will win a return trip to the planet earth in the year 2004. (applause) Alright leeeet’s play!**

*(He picks up the first card and reads.)*

**GUY FELLA (cont)** **“All objects will fall at the same rate regardless of their weight, provided they do not encounter air resistance.”**  
*(scientists explain.)*  
*(music rises.)*

**HYPATIA** **For example, if you dropped a bowling ball and a large stone for instance, they would hit the ground at precisely the same time.**

**ARCHIMEDES** **However, if you were to drop objects that had different mass, a giant mattress or a chest of drawers for instance, they would hit the ground at...**

**SIR ISAAC NEWTON** *(interrupts)*  
**It’s very clear that the chest of drawers would hit the ground first.**

**GUY FELLA** **Alright contestants, who invented that?**

**STUDENT 9** **Uh, I would have to say...Hypatia.**

**STUDENT 10** **I disagree, I say it’s Archimedes.**

**GUY FELLA** **And the inventor is...**

*(He flips the card over.)*

**Mother Nature!**  
*(Wild applause.)*

**GUY FELLA** Okay contestants now the next principle is, “A body in water receives an upward force, called an “upthrust” equal to the weight of water it displaces.”  
*(scientists explain.)*

**GALILEO** For example, a ship built of steel can float, while a single bar of metal will sink instantly.

**MADAM CURIE** The reason is **DENSITY**, which determines whether or not something floats.

**HYPATIA** For the density of an object is equal to it’s weight divided by it’s volume.

**PIERRE CURIE** So an object will float if it’s overall density is less than the density of water.

**WILBUR WRIGHT** The amount of up-thrust depends upon how much water an object displaces.

**GUY FELLA** Alright contestants, you’re in the hot seat now. Who invented that!

**STUDENT 8** I have to say **GALILEO** was pretty was pretty convincing.

**STUDENT 9** I think **MADAM CURIE** explained it extremely well so I’ll go with her.

**GUY FELLA** Alright, a tie between Madam Curie and Galileo. Now let’s find out, “**WHO INVENTED THAT?**”

*(Music back up, Guy flips the card over.)*

**It’s Mother Nature again!! And now ladies and gentlemen, for our third and final round, the principle is...”One can only get as much energy out of a machine as one puts into it in the first place--no more and no less.” Okay Scientists, who’s going to start us off here.**

**MARIA MITCHELL** For instance, if one uses their own muscles to push or pull a machine, they give it energy...Kinetic energy,

**which is the energy of movement.**

**ACHIMEDES**

**However, that same machine can only use the same amount of energy as was put into it.**

**SIR ISAAC NEWTON**

**In other words, energy can be transformed into a different form of energy, but the overall amount always remains the same.**

*(A flickering of lights.)*

**HYPATIA**

**For if energy was destroyed as machines worked, the machines would slow down and stop.**

**PIERRE CURIE**

**And if energy was actually created, machines would go faster and faster until energy built up to gigantic proportions.**

**MOTHER NATURE**

**Either way...the world would end.**

*(Mother Nature raises her hands. A tremor and flickering of lights. Explosions...students collapse.)*

**You see students, the principals of nature have been in existence long before any Human inventions....**

**STUDENT 10**

**What's going on?**

**STUDENT 5**

**I don't like this at all...**

*(rumble continues.)*

**MOTHER NATURE**

**It's time to send them back.**

**HYPATIA**

**We thought we were going to show them the way.**

**SIR ISAAC NEWTON**

**The world has changed so much.**

**ARCHIMEDES**

**Yes, but we can't control everything.**

**ALBERT EINSTEIN**

**That's exactly the point my dear friends, we can't control everything. They must use their scientific knowledge with their hearts and their minds.**

**PIERRE CURIE**

**Do you think that they can do it?**

*(Mother Nature turns and smiles at them.)*

**MOTHER NATURE**

**It's a start.**

*(There is a tremendous explosion. The students tumble through time and space, as at end of scene one.)*

## **SCENE SIX**

Music underneath as lights fade on the scientists and Mother Nature and rise on the students asleep back in their science classroom as in the beginning of the play. They slowly awaken.

**STUDENT 1**

**Wake up everybody!**

**STUDENT 2**

**Whoooa...whaaaa...where are we?**

**STUDENT 3**

*(Looks around)*  
**We're back! We're home.**

**STUDENT 4**

*(groggily)*  
**Home?**

**STUDENT 5**

**Well, school actually.**

**STUDENT 6**

**Omigosh. Our science projects!**

*(looks around and then begins to frantically paw through papers.)*

**STUDENT 7**

**Right.**

**STUDENT 8**

**My dad's gonna blow his stack if I flunk again.**

**STUDENT 9**

**Oh no.**

**STUDENT 10**

**We're doomed.**  
*(puts head in his hands.)*

**STUDENT 1** Wait a minute...I have like a mega idea!

**STUDENT 2** Uh oh.

**STUDENT 3** We can build something together.

**STUDENT 4** Like what?

**STUDENT 5** Something different.

**STUDENT 6** Something created from recycled materials...

**STUDENT 7** Something that will save energy...

**STUDENT 8** Something that is friendly to the environment...

**ALL STUDENTS** **AND MOTHER NATURE!**

**STUDENT 9** **And something that might help with homework?**

*(Music rises. Students step forward and sing.)*

**SONG: "ON THE EDGE OF FOREVER"**

*(Lights fade)*

**END OF PLAY. . .**