K–5 Reading Language Arts

ENGLISH

EUREKA!

THE ART OF INVENTION

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GRADE 4 UNIT 2 | VIDEO SCRIPTS

EDITION 1

Grade 4 | Unit 2

Eureka!
The Art of Invention

Video Clip Scripts

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Welcome to Eureka!

Jacques Cousteau, Hedy Lamarr, George Washington Carver and Thomas Edison sit behind a long table *à la* judges of *American Idol*. Jacques is wearing goggles on his forehead and lots of scarves; Hedy is attired like the 1930s movie star she was, George has a flower tucked behind one ear, and Thomas wears a period-appropriate suit with cufflinks that light up. They all turn to look at the camera abruptly and in unison. It is very dramatic.

Jacques: (*with a thick French accent*)
Bonjour, my intrepid leettle inventors. And welcome to our show!

Thomas: But what have they invented? *Maybe* with enough hard work they'll invent something. But right now? They're not inventors.

George: Come on, get excited! These students are themselves an undreamed invention. What they will make, what they will become, remains to be seen. Isn't it thrilling, Hedy?

Hedy: (*with utter boredom*)
Yes, I could not be more thrilled.

Jacques: But—you will be when our show is a beeg heet! Then even you, lovely Hedy, even you will be excited.

Hedy: Oh, Jacques, it is very sweet zat you think our show vill be a hit when I have heard that ve are in danger of being cancelled at any minute! Vhy? Because no one actually vatches ze show.

George: Well, with these intrepid students, as opposed to the more, shall we say—

Thomas: Unimpressive.

George: I was going to say "less motivated" students of past seasons, with this crop of seedlings, the show will certainly be a success.

Jacques: It is not in such danger, is it? I know for a fact that my mother's elderly friend Mathilde watches it when she is very very bored!

Thomas: Every year there is a 45% chance that a television show will survive to see the next season. That's not so bad!

Hedy: But zis means zere is a 55% chance ze show vill fail. If zere was a 55% chance I vould die ven I left ze house tomorrow, I do not sink I vould be leaving ze house.

Jacques: But you are already dead.

Hedy: How dare you address a lady in zis manner!

Thomas: He's just stating a fact. We are—all four of us—dead.

(*Off camera, one can view the unseen audience's shocked faces.*)

Yup: dead, dead, dead. That's right, folks (*and now Thomas attempts a* Price Is Right*-announcer-ish voice, and some cheesy music plays after each name is said aloud*)—Jacques Cousteau, who invented what today is commonly referred to as *scuba*—he is dead. George Washington Carver, who came up with hundreds of ways to use a peanut—

George: And a sweet potato—

Thomas: (*annoyed*)

And a sweet potato—

(*enthuasiastic again*)

And helped countless people in doing so—even that kind of extraordinary achievement cannot ward off death. Hedy Lamarr, who was not only a movie star but an amazing inventor to boot—her lovely self died many years ago.

George: And then we have Thomas Edison—

Thomas: Thomas Edison, inventor extraordinaire.

Hedy: Extraordinaire?

Thomas: Well, I did register over a thousand patents. No one else has come close to that number—

Hedy: (*interrupting him*)

Okay, yes, you are very smart, and very accomplished, no von vill contest zis, but zis show is not all about you.

Thomas: (*matter-of-fact*)

Sure it is.

George: (*looking at the camera*)

No, this show is about YOU—the students. You will spend the first part of the show completing "the Wheel of Invention" so that—oh it's just so exciting!—so that by the final episodes you can invent something *yourselves*.

Hedy: Yes, you vill accumulate ze vedges that vill equip you to invent. Each vedge corresponds to a skill that you vill need in order to come away a vinner.

George: But it is much more about what you, the students, will invent than about winning. I mean, you will think up something that was never there before! That's what this whole show is about, all in the name of—

Hedy/ Jacques: Vinning! And the vinning group vill be crowned—

Hedy/ Thomas/ Jacques/ George Eureka! Student Inventor!!!

(*Cut to black. End of Intro.*)

Irate Edison

Thomas: Oh no. Oh no, no, no. Oh you've got to be kidding me. This is . . . This is absurd. This is nonsense. This is fiddle-faddle and poppycock of the highest order. I call fiddlesticks! I call tommyrot! I call rubbish, rubbish, rubbish!!! Okay—okay, Thomas, calm down. Go take a bath. That usually works. Is there a warm bath around here anywhere? Does patenting over 1000 products get a man anything?? Are a tub and hot water and lavender-scented soap bubbles too much to ask??? Aaaaaah!!!

Good Pitch/Bad Pitch

(*Amber smiles at the class. She is a model student, but not a teacher's pet.*)

Amber: (*very naturally/enthusiastically*)

Hello, my fellow inventors! I'm really pleased to be here today to tell you about one of the truly terrific things that mankind—or in this case, womankind—gave to the world: the chocolate-chip cookie.

(*She holds up her piece of paper—her pitch—and begins to read, looking up at the class every now and then.*)

That's right, folks. You heard me. A simple cookie that you take for granted had to be *invented*. Someone had to think it up. And that person was Ruth Wakefield. A woman who owned a restaurant in Massachusetts and one day in 1930 wondered what would happen if you added pieces of chocolate to a butter cookie. And what she found was that the pieces of chocolate didn't melt! They stayed intact! And the cookie tasted delicious! So I would argue that, even though this invention doesn't fix all the problems of the world, it is really one of the most important inventions around—because it makes people happy. Here are two examples. Let's say you're on a long car ride and your little brother is being annoying. Maybe he poked you even though your mom said "no poking" and then when you poked him back—which is only fair, he started it—he began to cry. What a baby. But if you give him a chocolate-chip cookie, he might stop crying—which will make the trip much easier on everyone. Or, let's say you're watching your favorite TV show while lounging on your couch on a lazy Sunday afternoon. You think: "life could not get any better than this!" But then you realize it *could* get better. You *could* be eating a chocolate-chip cookie *while* watching your show, making the experience even sweeter.

Basically, the chocolate-chip cookie is "happiness in just three bites" (*or maybe more bites depending on the size of the cookie*).

Teacher: Thank you, Amber.

(from offstage) Great job, Team Cookie. Okay Team Light Bulb, you're up.

(*Paul stands and slouches. He looks deeply uncomfortable. He looks at his piece of paper. He looks out at the crowd. He doesn't say anything.*)

Teacher: Whenever you're ready, Paul.

(from offstage)

Paul: (*mumbling*)

Okay, so, um, the light bulb. The light bulb is like, good, because, you know, it lights up and stuff.

Teacher: Could you speak up a bit.

(from offstage)

Paul: (*a little louder*)

People needed the light bulb and then it got made and it made things easier . . .

Teacher: When did it get made? Who made it?

(from offstage)

Paul: Oh, right. I think it was made by Thomas Edison in like, eighteen seventy-something?

(*just occurring to him*)

Oh hey! Once my dad told me a joke about light bulbs. "How many policemen does it take to change a light bulb?" . . . And the answer is: "None. It turned itself in." Get it? It's funny because sometimes people turn themselves in to the police, but here the light bulb *turned itself* in. Get it? That's why it's funny. My dad explained it to me. He's a cop.

Teacher: … Okay, do you have anything else to add?
(from offstage)

Paul: (*looks at his paper. Then looks up again.*)
It was really important, the light bulb. It was just, like, important.

Teacher: (*unimpressed*)
(*from offstage*) Is that it?

Paul: Yeah, it's a cool invention.

Teacher: "A cool invention"? Is that really the best you can do?? I don't think
(from offstage) Mr. Edison is going to be pleased about this. He's not going to be pleased at all.

Simple Machines

George: Okay, goobers! You heard about how Ms. Lamarr's remarkable invention was based on the work of those who came before her. And how modern scientists then used her invention to develop Wi-Fi, GPS, cell phones and all sorts of things that none of us could have imagined when we were inventing.

Thomas: Please don't presume to know what *I* could have imagined.

George: Of course not, Thomas. Just a figure of speech. Anyway, let's talk simple machines! I get the tingles just thinking about these six inventions that became the basis for so many others.

Thomas: (*chuckles*.)

George: Did I say something funny?

Thomas: No, no. I suppose when your greatest triumph comes in chunky and smooth, a *simple* machine might seem extraordinary. But my inventions ushered in a new age! Electricity, movies, the phonograph. I'm way beyond simple machines, and frankly, I think our student inventors are, too.

George: That's where you're wrong, Thomas. All of our inventions are based on inventions that came before them. I mean, consider the humble screw. It's one of our simple machines. Without the screw, wouldn't your light bulb be difficult to connect?

Thomas: (*grudgingly*)

I suppose so.

George: And how about the wheel and axle? Another simple machine. Doesn't the handle of your phonograph depend on that mechanism?

Thomas: Well . . . yes, you could make that argument, I guess.

George: And take a look at the—

Thomas: I get your point, Carver!

George: Glad to hear it. Now, legumes, let's go over the simple machines one by one. Starting with the screw! Just a little cylinder with a spiral thread running around it. But that thread makes it one of the most powerful fastening tools around.

Jacques: Who invented it?

George: Great question, Jacques!

Jacques: *Merci, Georges.*

George: (*getting a little annoyed*)

It's "George." Just plain "George."

(*back to lecture*)

Anyway, the simple machines were all amazing breakthroughs, but we don't know who came up with them first. We just have to imagine how exciting it would have been to witness the invention of the wheel.

Hedy: Vi would that have been exciting? Did zey have anywhere zey actually needed to go? "Oh goodie, zis morning ve can use our veels to get us from one cave . . . to another cave."

George: Actually, our number two simple machine, the wheel, wasn't first used for transportation. Wheels were attached to axles to make tasks easier. You see, it's easier to spin an axle attached to a wheel than an axle on its own. Think about the handle of a doorknob as a wheel. A few spins of the wheel and you've opened the door. It requires less force to turn the knob than it would to turn the axle all by itself. Oh, another great example is—

Hedy: Pick up ze pace, vill you? I can almost hear the United States changing ze channel.

George: Fine, our simple machine number three is the wedge! Tools shaped like a wedge are great for splitting, ploughing, all sorts of things. The blade of an axe is a wedge.

Jacques: So is the front of a boat. The prow. It cuts through ze water like a plough cuts through the soil.

George: The next two simple machines give humans superhuman strength. Simple machine number four, the lever, is an astounding device that consists of a beam resting on a fulcrum. You can lift very heavy loads on one end of the beam by pushing down on the other. Like a see-saw. Hey, with the right size lever, you could even lift . . . an *elephant*!

Hedy: You could even lift Thomas Edison's ego.

Thomas: Was that warranted?

George: Simple machine number five, the pulley, is a rope thrown over a wheel.

Jacques: I use pulleys to load cargo onto my boat. I string a rope through a groove on a wheel, attach my cargo to one end of the rope and pull on the other end. *Voilà*

George: If I were forced to choose a favorite simple machine, this last one would be it.

Hedy: How vould zis happen?

George: What?

Hedy: Zat you vould be *forced* to pick a favorite machine. Do masked bandits roam the land threatening to throw inventors off ze roof if zey do not choose a favorite machine?

George: It's just an expression, Hedy. Now, everybody. Imagine a flat surface tilted at an angle so that one side is higher than the other.

Hedy: It sounds like a ramp. Zis is your favorite machine?

George: It is, Hedy! Picture this. A prehistoric family lives in a cave, and the entrance to the cave is two feet off the ground. One day the cavewoman comes across a large rock she thinks would make a perfect coffee table to go in front of her couch. Which is also a rock, by the way.

(*He laughs quietly, then continues.*)

Before the inclined plane, if the rock was too heavy to lift into the cave, the family would be out of luck. But if they build an inclined plane, our simple machine number six, they can roll the rock right into the living room!

Thomas: Okay so that's six, right?

(*to Stage Manager, who is offstage*)

Can we move on?

Stage Manager: Yeah. Judges—take lunch.

(*The puppets begin to disperse.*)

Stage Manager: Oh, Carver. Some guy in a mask wants to talk to you. He's up on the roof.

George: On my way!

(*George exits. The others look after him for a moment, then at each other, then quickly hurry after George.*)

Thomas, Hedy, Jacques: George! Professor Carver! Stop! Georges!

Failure

George: So the producers tell me we should talk about flavor. I'll start with the sweet potato! I guess I'd say it's sweet, like a yam or a pumpkin, but also—(*he hears something in his earpiece*) What? . . . OH, you want us to talk about failure? I guess I must've failed to hear you.

(*He laughs, thinking this is very funny; but looks around and no one else is amused*)

Jacques: Georges (*pronounced in the French way*), can we be *sérieux*—that means serious.

George: It's George (*pronouncing it as an American would*)! How many times do I have to—

Jacques: That is what I said: Georges (*still pronouncing it the same way*). And anyway, it does not matter—failure is so closely linked to success; there is really no sense in trying to distinguish one from the other.

Hedy: Vat?? No, there is failure. It exists—all on its own, in ze crude light of day. I myself—beautiful movie star and brilliant scientific mind—have experienced failure. I myself have experienced crushing defeat.

Jacques: It is not possible.

Hedy: It is.

Jacques: It is not.

Hedy: (*sharply*)

I vill not play zis game vit you! It is possible. It happened many many times. For instance, I once invented a cube zat you could put in water to turn it into vat you Americans call "soda pop." I worked hard on zis thing and I thought it would change the world, or at least the beverage industry, and zen—poof! Nothing. It didn't make enough fizz.

Thomas: But if we don't risk failure, we don't stand to gain a thing. In fact, many of life's failures are experiments that were so close to success! So … you just have to keep going. And if you have enough ideas, some of them, a few of them, 1,093 of them, will be really good ones.

Jacques: Maybe it will be more helpful to ze little tadpoles to talk a bit more specifically about some actual failures on the road to actual success.

George: Right, like that light bulb you're always yammering on about.

Thomas: I thought you would never ask. Yes! Finally! Let me paint the scene—1878: horse-drawn carriages, candles in every window. There was electricity, but no one had figured out how to light small areas—rooms—as opposed to whole city streets. I thought I could figure it out in six weeks. And so I started experimenting with the filament—the metal wire inside the bulb. I tried making it out of different materials. But no matter what I did, the bulb would just—zap!—burn out. It was a year before I found a combination that worked. Then it took another whole year to make a lamp that wouldn't burn out after a week. But in that whole time I never felt I was failing. I felt I was ruling out possibilities one by one and getting closer and closer to the answer.

George: And that kind of patience and persistence in the face of frustration is the mark of a good inventor.

Thomas: Ahem.

George: (*reluctant*)

A great inventor.

Thomas: Ahem ahem.

George: (*really reluctant*)

Inventor extraordinaire.

Thomas: (*saying George as Jacques does*)

Indeed it is. Thank you, Georges.

George: It's George!!

(*George throws up his hands and exits. End of video.*)

Why We Invent

Thomas: Why we invent?? What an absurd question. We invent because we see a problem in the world that needs to be solved. Like people not being able to light their homes! A pretty big problem if you ask me. Why *else* would anyone invent?

Jacques: I will say only one thing—

Hedy: (*interrupting him*)
It vill be ze day ze pigs fly when you say only one sing.

Jacques: Oh, Hedy, you know me so well! You must be in love.

Hedy: I am absolutely one hundred percent not in love with you.

Jacques: (*he doesn't believe her*)
If you say so.
(*turning back to Thomas*)
So I did not invent with the objective of solving a problem in ze world. I invented for more personal reasons. I created ze scuba because I wanted to spend more and more time with the great love of my life—

Hedy: Jacques, please cut zis out now. It's enough!

Jacques: The ocean.

Hedy: (*a little hurt*)

Oh.

Jacques: At a certain point I wanted to be able to go deeper into the ocean and to stay there longer. And so, with a friend, I made something that would allow me to do so. And happily my invention helped ze world too—what can I say—I am just that good. For instance, if a ship filled with treasure were to sink, and you wanted to try to retrieve that treasure, you'd need to be able to stay underwater for quite a long time.

George: But how many people does that help? I mean, sure, maybe a *few* people get rich from finding lost treasure; maybe a *few* people get to enjoy the wonders of the undersea world but is that so practical? Does it save lives??

Jacques: It can!

George: Does it help the masses?

Thomas: Like the light bulb.

George: Like my many ideas about ways to use the peanut, the pecan, the sweet potato, and the soybean. I saw that southern farmers needed to make a better living—a problem—and so I came up with a solution: more and different uses for their crops. According to the Internet, I figured out ways to make adhesives, axle grease, bleach, buttermilk, chili sauce, ink, instant coffee, mayonnaise, paper, plastic, pavement, shaving cream, shoe polish, talcum powder and wood stain. Wow, the Internet really is thorough.

Hedy: I must say, George—you made a lot of use of those crops.

Jacques: But you can't compare scuba gear and mayonnaise.

Thomas: I can compare *anything* to the light bulb and find the light bulb superior every time.

Jacques: Anyway, it's not a competition, Hedy.

Hedy: Of course it is. It's—

All Judges: Eureka! Student Inventor!!

Man on the Street

Jacques: (*to the camera, in a conspiratorial whisper*)

Bonjour, it is me, Jacques Cousteau, your *favorite* judge. What can I say? I am very likeable. Recently I took that likeability to the streets. And guess what? Today is your lucky day because I will share with you the fruits of my labor. Here is the video that we made when I, Jacques Cousteau, asked the real people on the street about what they felt needs to be fixed in the world. And by listening to them we all will get ideas for new inventions! Let's roll that tape, yes?

(*Jacques Cousteau stops a woman on the street outside the offices.*)

Bonjour, madame! Would you mind very much if I asked you a few very simple questions about the whole world and your place in it and where you see it all going in the future?

Woman 1: Actually it would be helpful if you narrowed your questions a little.

Jacques: (*a little frustrated*)

Fine. I suppose I am most curious about problems you experience in your life, in the world; you know, problems in your home, in your place of work, in your neighborhood. In your community.

Woman 1: Okay, that's still a lot of questions.

Jacques: Really??

Woman 1: Yeah …

Jacques: (*really frustrated*)

Fine! Are there any problems in your life, your daily life, that you would love if someone solved?

Woman 1: Can I say "people bothering me on the street?"

Jacques: No.

Woman 1: Okay … Then I'd say I hate when I get in bed and realize I've forgotten to brush my teeth, but I'm too tired to get out of bed and do it. I think you should be able to brush your teeth in bed without lifting a finger.

Jacques: You would say that, wouldn't you.

Woman 1: Was that a bad answer?

Jacques: Well, it has nothing to do with the ocean.

Woman 1: Was it supposed to?

(*Producer whispers to Jacques*)

Jacques: Okay, we're moving on.

(*another man passes by*)

Excuse me, sir, I'm wondering what problem at your place of work might be solved with a new invention.

Man: Hmm … Maybe … Maybe it would be great to have a watch that beeped a few minutes before a meeting to remind you about the meeting and then you'd never be late to meetings … ?

Jacques: I'm fairly certain that exists already, but let's say the problem you've identified is being late to meetings at work.

Man: Yeah!

(*The man returns to his phone call.*)

Jacques: Can't anyone come up with a decent idea!?

(*A woman sits on a bench.*)

Excuse me! *Excusez-moi, madame.*

Woman 2: Yes?

Jacques: You look like someone who thinks about her community and problems it might be facing.

Woman 2: I *am* someone who thinks about her community and problems it might be facing.

Jacques: What are some of those problems? Name one.

Woman 2: Well, for one, it's a problem that in the mornings, the early mornings, the electric company is sometimes drilling in the street, and it's incredibly loud and it wakes everyone up.

Jacques: How terrible.

Woman 2: It's another problem that when I buy a banana and walk around with it all day in my bag it's mushy by the time I want to eat it.

(*She gets out a banana and demonstrate*s.)

It was just fine this morning.

Jacques: (*unimpressed*)

And I'm being told that's all we have time for.

Yes, I think we are out of time.

Thanks so much, and students—I cannot wait to see what kinds of problems you end up wanting to solve!

Eureka Survives!

Hedy: Well, how do you like zat? How do you like zat?!

George: Bravo, seedlings! Bravo!

Jacques: Those pitches were unparalleled—*sans précédent*. Far and away superior to last season's. Mi-Shell and I are very impressed!

Hedy: You certainly exceeded my expectations, even zough zey vere, admittedly, very low.

(*They all look at Thomas, waiting for him to offer his congratulations.*)

Thomas: Yes. That was fine.

George: That's it??

Jacques: Well—I'm still not sure they truly appreciate the wonders of the light bulb—

(*The judges get an announcement from the producers in their earpieces. They spontaneously jump up and down and break out in cheers, drowning Thomas out.*)

Hedy: We are saved! Ze show is saved!

Jacques: Oh my! Oh my! Oh my! Zis is more exciting than jumping into the ocean without any clothes on! Oh, how bracing that is. But also wonderful!

George: We've been renewed! Woo-hoo!!

Hedy: Incredible!

(*Jacques raises his hand for a high five.*)

Jacques: Come on, Hedy. High five!

(*She pauses and then high-fives him. Thomas stands very still and off to the side a bit.*)

George: Thomas!! Live a little. Undo those cufflinks and let your hair down.

Thomas: Well, I don't have much hair to—

George: It's an expression!!

Hedy: The leetle inventors saved the show!! This is good news for them, but also for me. Now I can afford to eat all the bockwurst and *wienerschnitzel* I could possibly desire!

Jacques: And now we can all be together—forever!

Hedy: Or at least for one more season.

(*all the judges dance*)

George: Well, okay—that wore me out! I'm gonna sit down for a spell. And you might want to sit down too, because the producers tell me you student inventors did such a good job that you have earned the right to make some more inventor cards—about yourselves!

Jacques: Yes, there is immortality in inventing! You stay alive through your inventions. We four here are a case in point. So make your inventor cards! And be proud of yourselves! I know I am.

Hedy: I am too.

George: And me.

(*They look at Thomas.*)

Thomas: I am too. Very proud.

All Judges: And you should be too!

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