

# IndyKids Teaching Guide

A free guide for free teachers • November/December 2013

Cover Page

## Featured Lesson: What's in your smartphone?

"The Life Cycle of a Cell Phone" by Eliya Ahmad

*Social Studies, Science*

**Overview** • When you hold an iPhone, you have gold, silver, copper, platinum, tin and many other elements and minerals in your hand. Each of those minerals had to be pulled from the ground by human hands. Whether from gold mines in the Eastern Congo or tin pits in Indonesia, there's a chance that the people mining those minerals experienced violence, exploitation or environmental degradation. Once it's all packed into a gleaming new gadget, though, these people and experiences become invisible.

In this project, students research different stages in the production of a smartphone, from resource extraction and manufacturing to retail, then present their research as first-person testimonials of people from these regions.

**Goal** • In a class project, students team up to research and present various stages of a smartphone's manufacture. By the end of the project, students should gain an empathetic understanding of the global processes behind technology, and be able to explain how our love of gadgets affects people the world over.

**Materials** • *IndyKids* May/June 2013 class set; computers or printouts for research; materials for presentations

**Warm Up** • Consider a pencil. Where does it come from? Where does every component that makes up a pencil originate? Have students examine their pencils and list each part of the pencil, the raw materials used for it, and where they guess those raw materials come from. The National Geographic website has an excellent [handout](#) and [lesson](#) based on this question (and the handout lists where these five raw materials originate).

**Activity** • Discuss how many steps are involved with the creation of a pencil. Besides mining and harvesting the raw materials, ask students what other processes might be involved, such as shipping, manufacture, packaging, etc. And that's just a pencil!

Explain that in this project, students will be exploring how a much more complicated product is made: a cell phone. In groups, students will research parts of the manufacturing process, role-play as people who participate in that process, and report what they've learned to the rest of the class.

Read the *IndyKids* cover story "The Life Cycle of a Cell Phone" with the class. Together, brainstorm all the different steps that are involved in the creation of a cell phone.

Present the four selected locations students will be exploring: tin mines in Indonesia, rare earth mines in Baotou, Mongolia, manufacturing plants in China, and retail stores in the US. Each group will choose one of these links in the chain of smartphone manufacturing to explore.

- [Step 1: Research](#)

In this stage, students explore the region and industry they've chosen or been assigned. Students may use the readings listed, or perform their own internet research. In their research, groups should answer the questions:

- 1) What does your community produce? How is it produced?
- 2) How does it contribute to the finished smartphone?
- 3) What is the average day like for a worker in your community?
- 4) How does the industry affect your community? Think about health, environment, and other industries in the community.
- 5) Overall, how are the people of your community personally affected by this process? How do they feel about it?

▪ Step 2: Drafting

Students will choose three roles for presentation: one narrator, and two community members. The narrator introduces the area by explaining where it is, what they produce, and how it fits into the smartphone manufacturing process.

The two community members give first-hand accounts of their daily life in the community, their experiences working in the local industry, the effects the industry has on their community, and the hopes they have for the future.

Students should spend this part of the process collaborating to create the narratives and testimonials. Students not presenting in these roles can create visual aids such as posters or PowerPoint presentations, or otherwise assist in research and planning. "Visual artist" and "Time manager" are two helpful roles here.

▪ Step 3: Presentation

Each group presents their aspect of the smartphone manufacturing process to the rest of the class. Each presentation should last 5-8 minutes. Make sure to go over respectful listening habits with the students before presentations begin.

Students should take some notes of what interests, surprises or shocks them during the presentations. A simple way to structure open-ended note-taking is to have students answer these prompts for each presentation:

- 1) One thing I learned during this presentation...
- 2) One thing I felt during this presentation...
- 3) One questions I have after this presentation...

Once each group has presented, students may free-write their impressions or answer the prompt: "A friend tells you they *really really* want to buy the new iPhone! Write a letter to them explaining what you think they should know."

**Readings** • Below are articles relating to four steps in the smartphone supply chain.

- Tin mines – [Bloomberg BusinessWeek](#): "The Deadly Tin Inside Your Smartphone"  
This one is quite long, but an [accompanying video](#) could help.
- Factory labor – [New York Times](#): "In China, Human Costs Are Built Into an iPad"
- Mining for metals – [The Guardian](#): "Rare-earth mining in China comes at a heavy cost for local villages"
- Sales and retail – [New York Times](#): "Apple's Retail Army, Long on Loyalty but Short on Pay"

### Standards\*

- [CCSS.ELA-Literacy.RI.8.3](#) Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).
- [CCSS.ELA-Literacy.SL.8.4](#) Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.

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## Taking it Further

“The 2013 Mayoral Elections” by Kavi Ahmed • *Social Studies*

**Overview** • Although the presidential elections every four years get far more attention, municipal elections have a more immediate and direct impact on our lives. That’s why it’s essential to know who runs your city! These questions can help students apply “The 2013 Mayoral Elections” to their own lives.

- 1) Who is the current mayor of your city?
- 2) How long has she or he been mayor?
- 3) What is their *platform*? That is, what issues are important to them?
- 4) What’s one *signature achievement* or big goal your mayor has accomplished, or wishes to accomplish?

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## Activity: Creating Community Spaces

“**Little Free Libraries?**” by Adedayo Perkovich • *Social Studies, Civics*

See also: “From the Bronx, Hip-Hop Activists Rebel Diaz Rap for Change” by Malik Nickens

**Overview** • Throughout their schooling, students are continually asked what they want their careers to look like. They’re asked far less what they want their *communities* to look like. In this lesson, students take after the example of the Little Free Libraries, and imagine what free institutions could benefit their own communities.

**Activity** • After reading “Little Free Libraries,” discuss the importance of community with students by coming up with a class definition of *community*. Is it just a group of people? A geographical space? What makes a community more than a number of humans living in a given radius?

With the class definition in mind, have students brainstorm a community project that would inspire them and their neighbors. Little Free Libraries aim at reading and literacy, but there are many more cultural and social goods to explore: music, arts, food, exercise, theater...the possibilities are endless!

Working solo or in pairs, students should devise a community project. They can begin by thinking of what their community *needs*, or what they *want* for it. They should also ask themselves what resources their community already has to be built on. Finally, they should answer *how* this project can come about.

Students create a plan that describes why their project is needed, how it will operate, and why it’s important to them. Students can present their plans in various ways:

- A proposal for their city council
- A letter to the mayor explaining the project and how you'll set it up
- An invitation to friends and family to join in and participate (perhaps in Facebook invite form...)
- A song, poem, performance or other artistic expression—particularly if it's relevant to their project!

**See also** • [Alex's Lemonade Stand](#), a charity dedicated to fighting childhood cancer, was started by a four year-old girl with cancer who wanted to raise money for other children with her condition. It grew into a national fundraising movement, and the website provides excellent resources for holding a lemonade-stand fundraiser of your own.

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## Taking it Further: Going the Distance

“Diana Nyad Found a Way” by Amelia Loeffler • *Mathematics*

**Overview** • Diana Nyad did what many thought was impossible: swimming the distance between Cuba and Florida. Using information from the article, students can put this feat into context.

- 1) The equation for average velocity (or speed) is  $v = d/t$  where  $d$  = distance and  $t$  = time. In miles per hour, what was Nyad's average velocity?
- 2) The average sailboat travels at 8 miles per hour. If a sailboat left at the same time as Nyad for the same journey, how much sooner would it arrive in Florida than her?
- 3) The English Channel, which separates England from France, is 20.6 miles across at its narrowest point. How many times could Diana Nyad swim the English Channel, back and forth, in the time it took her to swim from Cuba to Florida?
- 4) CHALLENGE: If a sailboat travelling 8 miles per hour left Florida at the same time that Nyad left Cuba, how long would it take them to meet in the middle?

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## Lesson: Seeking Refuge

“What is a Refugee?” by Nancy Ryerson

“War Refugees” by Daphne Knouse Frenzer

“Environmental Refugees” by Nylu Avery Bernshtayn

“Economic Refugees” by Alejandra Paulino

*Social Studies, Language Arts*

**Overview** • Most Americans have never gone a night without a roof over their heads and food in their bellies. But millions of refugees around the world have been forced, under desperate circumstances, to flee their homes to find refuge elsewhere. Their struggle for safety, dignity and freedom is one that goes largely unseen by many ordinary Americans.

In this project, students write stories from the perspectives of refugees in order to imagine the trials and challenges that millions of people around the world face. In doing so, students will start to humanize those whose humanity has been denied.

**Goal** • Students will write creative narratives based on photographs of refugees living in cities throughout the world. In these narratives, students will demonstrate compassion and an understanding of the concrete realities faced by refugees.

**Materials** • *IndyKids* May/June 2013 class set; projector or printouts of TIME Magazine photo set and UNHCR refugee art photoset

**Warm Up** • Tell students you'll be showing them pictures drawn by children around the world who all have something in common. Show the pictures from the UNHCR website called "Refugee Artwork." Ask students to write down and discuss what they think these children share; what links them? After they have guessed, explain that all of these photos were drawn by child refugees, children who have had to leave their homes due to war, disaster or economic disruption.

(Pictures on the UN site are small. To zoom in, hold Command key and press + on Mac; on PC, hold ctrl and press +.)

**Activity** • This lesson contains three parts. First, students learn what a refugee is, and the three conditions that create displaced people. Second, students take notes on the feelings and experiences of various refugees. Finally, students create narratives weaving together what they've learned with their own creative insights.

#### Part One: What is a refugee?

Students may begin by starting a KWL chart (attached at end of this document) on refugees. Give students a minute or two to talk with a neighbor about what they know of refugees, then another minute to write this in the left-hand column, what they *know*. Discuss with the class, and then ask students to fill in the center column, what they *want* to know about refugees.

Begin by reading the centerspread *IndyKids* stories on the three types of refugees. Have students take notes on the categories, writing at least three characteristics that distinguish each type of refugee.

Though students will learn more about the topic in lessons to come, they can begin to fill in the "learned" section on the right.

#### Part Two: How does it feel to be displaced?

Begin by posing this hypothetical: imagine you had to leave home today for a foreign country. You don't know how long you'll be there; it could be weeks, it could be years. You are allowed to take only two things (and they can't be money!). What do you take? Why?

After discussing, explain that in this section you'll be focusing on what it's like to be a refugee: the thoughts and feelings of refugees.

Watch the UN-produced video "[To Be A Refugee](#)" (8 min) with the class. Before watching, instruct students to pay special attention to the children in the video, both in what they say, and in what they don't say. Students should divide their notes into **observations** and **inferences**. For instance, the brothers Damir and Medin say that one

of the worst parts of being a refugee is the bullying (observation). One can further infer how close the brothers have become based on the way they're shown walking in lockstep in the video (eg at 4:15).

After the video, discuss what students noticed about these children's experiences. What emotions come up in their new lives? What positive qualities do these children have that allows them to persevere? Be sure to note how displaced people find ways to overcome the difficulties around them.

### Part Three: Narratives

In this last part of the project, students write narratives based on moving images of refugees around the world.

First, group students and hand each group a refugee narrative from the UN website (see "Readings," below). Each group should carefully read the narrative and elect one person to explain to the rest of the class who their refugee was. They should include the following:

- Refugee's name
- Birthplace and home
- Current residence and reason for having to seek refuge
- One difficulty or challenge they have faced
- One example of creativity, perseverance or hope they've demonstrated

By this time, commonalities between all the diverse refugee experiences the class has studied should become clear. Most refugees struggle with the difficulties of a new life in a foreign land; most refugees rely on the strength of family and community to persist; most refugees find creative and inspirational ways of maintaining their dignity and humanity.

Tell students they'll be writing the stories of refugees based on pictures. Students imagine the stories behind these photographs, and build a narrative to fully humanize these static photographs. Show students the slideshow, pausing on each picture long enough for students to study the image and write one word or phrase that comes to mind.

After you've gone through the slideshow once, ask students to pick one photo from the set and imagine a person living in that situation. How might they have gotten there? What struggles have they seen? What victories, small or large, have they won? The person they imagine can be their age, they can be a different age; they don't have to be shown in the photograph.

Emphasize that the narratives should be full enough to dwell not just on the challenges, but on how that refugee has overcome those challenges, how they were empowered.

When students finish, there are a number of ways they can present: they may participate in a reading, publish the stories in a chapbook, or create a blog.

**Readings** • The following are narratives to be drawn from in class.

[Hashmat Suddat](#), Afghan refugee

[Zlato Haveric](#), Sarajevo refugee

[Michael](#), a Sudanese refugee

[Blue Key Blog](#), continually updated interviews and profiles of refugees

[TIME](#) photo set

### Standards\*

- [CCSS.ELA-Literacy.W.8.3](#) Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.
- [CCSS.ELA-Literacy.RI.8.1](#) Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.

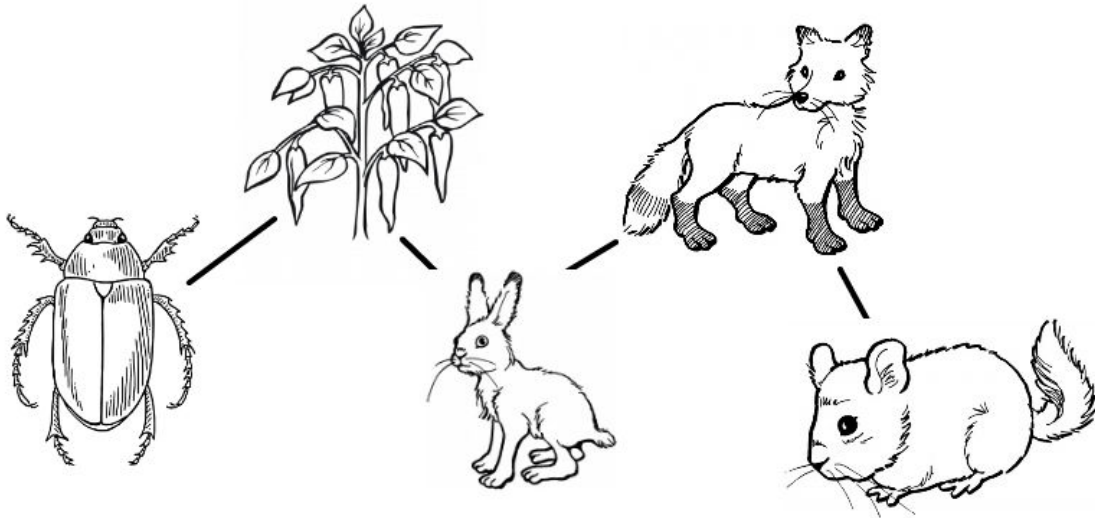
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## Activity: What's the Buzz About Bees?

"Where Have the Bees Gone?" by Ana Phelan • *Science*

**Overview** • In this activity, students explore the complex effects that ecosystems experience when interrupted by humans. Students will explore the web of cause and effect that leads from pesticides to pollination, then explore in depth each of these various aspects.

**Activity** • After reading "Where have the bees gone?" explain that in every ecosystem small causes can ripple into greater and greater effects. As an example, we can imagine introducing an invasive insect species that kills off a plant that rabbits eat. When the rabbit population decreases, so does the fox population, which feeds on rabbits. When the foxes die off, the mice lose their main competitor and increase rapidly.



In the article, a series of causes and effects are explained. It's the students' jobs, acting in groups or pairs, to describe the complex chain of causes and effects surrounding bees and pollination. For each part of the system, students should write a few sentences describing how the interaction occurs, and what results it has in natural systems.

Encourage students to take the process one or two steps beyond what's described in the article. How will this impact farmers? How will it be felt in society? How will it impact human food supplies? Attached is a list of products that rely on bees for their pollination.

## Who Needs Bees?

*The following crops rely in part on bees to grow. Imagine what the produce aisle would look like if bees stopped pollinating these fruits, nuts and vegetables!*

### 1. Apples

Surprise, surprise — the nation's largest producer of apples is Washington State. In a typical year, 10 to 12 billion apples are harvested every year by hand, or put another way, about three out of five apples in the United States come from Washington. That's staggering — and without bees, the cross-pollination needed to produce apples just wouldn't happen on a scale large enough to produce today's crop.

### 2. Almonds

About 80 percent of the world's almond supply comes from California, which requires about half of the honeybee population in the United States for pollination each year. Valued at more than \$3 billion, this crop is California's top agricultural export. This year's crop is the largest ever, at 1.9 billion pounds, most of which is destined for locales in Asia, Europe, and the Middle East. The almond crop is completely dependent on honeybees for pollination.

### 3. Blueberries

Besides being loaded with antioxidants, they're also delicious on top of pancakes, in muffins, and of course, in pie. The loss of the blueberry crop wouldn't just be felt at the kitchen table, however — the National Agricultural Statistics Service values the nation's blueberry crop, most of which comes from Maine, at more than \$593 million, 90 percent of which is pollinated by honeybees.

### 4. Cherries

Honeybees are responsible for pollinating about 90 percent of the cherries in the United States, according to the National Agricultural Statistics Service, most of which come from Washington State. Sweet cherry trees require the pollinating activities of honeybees in order to produce enough fruit for a commercially viable crop.



## **5. Avocados**

The National Agricultural Statistics Service reports that 90 percent of the avocados grown in the United States rely on honeybees for pollination. Holy guacamole!

## **6. Cucumbers**

Cucumbers are a popular option for cooling down in the hot summer months. Their cool, fresh flavor and crunchy bite make them a popular addition to salads and sandwiches. Without honeybees, though, the majority of the country's \$193 million cucumber crop would be nonexistent.

## **7. Onions**

Out of onions? Out of luck. Onions are the base for myriad classic sauces, soups, and stews when cooked, and when raw, are pretty much required in tacos, salsas, sandwiches, burgers, and salads. You'll still be shedding tears even when they're gone.

## **8. Grapefruit**

Sweet-tart grapefruit, whether eaten with a spoon or cut into segments, is a breakfast staple for the health conscious. It's also delicious in salads and blended into smoothies and cocktails. Grapefruit is just one of many kinds of citrus almost entirely dependent on honeybees for pollination.

## **9. Orange**

It probably goes without saying that if you're going to bring up grapefruit, you have to bring up oranges. And the data actually do back this up; like grapefruit, oranges are 90 percent dependent on honeybees for production. That morning cup of orange juice would get a lot more expensive. Maybe we'll just import our way out of this one — except, colony collapse disorder is a worldwide problem.

## **10. Pumpkins**

Halloween just wouldn't be the same without pumpkins, nor would Thanksgiving. This iconic American crop is heavily dependent on honeybees for production, and without them, there would be no pumpkin carving and no pumpkin pie.

## K/W/L CHART

**Instructions:** In the left-hand column, make a list of things your **know** about the topic. In the center column, make a list of things you **want** to know about the topic. After exploring the topic, write what you **learned**.

**Topic:** \_\_\_\_\_

What I <b>K</b> now	What I <b>W</b> ant to know	What I <b>L</b> earned

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### **\*A note on standards**

Included in each full IndyKids lesson are relevant Common Core standards. We're aware that not all states and districts have adopted these standards, nor are all teachers comfortable with their implementation.

In Finland's national educational standards, the first listed objective in mathematics holds that students should "derive satisfaction and pleasure from understanding and solving problems." This sort of entreaty to the social and emotional aspects of education is entirely lacking in the Common Core standards.

IndyKids aims to meet the Common Core standards for those teachers who, by choice or by mandate, teach with them in mind. But we hope to do so without forgetting the affective part of learning, that in addition to relaying skills and knowledge, educators instill joy, compassion and imagination in their pupils.