Let the Games Begin!

Gamification for good in environmental education classrooms

By Vanessa LeBourdais

O K, I’LL CONFESS. I’m not a gamer. Sure, I’ll play Sudoku on my phone once in a while, but most games leave me a bit cold. Maybe because I grew up before video game companies realized girls might also want to play. Regardless, I find myself a bit surprised to have created several successful environmental-education games, and now to be here sharing what I’ve learned with you.

Mostly the credit goes to my creative and life partner, Ian Gschwind, who is a gamer. He’d come up with an idea, and I’d be saying, “But it has to be kind!” and “How are girls going to enjoy that part?” So you see, together, gamer and non-gamer, we’ve managed to create something that most gaming companies made up entirely of gamer geeks have not—a kind, life-affirming use of games that is making a real difference in the world.

There’s a lot of buzz around the gamification of education these days. There’s even a school in New York, Quest for Learning, entirely built around it. You’ve probably wondered, if you bring gamification into your classroom, will your students start getting overly competitive? Will you be supporting addictive behaviour? How do you capitalize on the fun and engagement of gamification without it turning into the Hunger Games?

Or maybe you’re wondering just simply, what is gamification, actually, and how can you integrate it gently and easily into your environmental education efforts? Plus, most importantly, will it benefit kids or merely distract them from learning?

At DreamRider Productions, a national environmental education charity that’s been engaging kids in environmental issues since 1997, we’ve integrated gamification into our digital Planet Protector Academy program in a way teachers just love: where kindness, inclusion and cooperation are rewarded.

“My student with autism got up in front of the class for the first time ever, to take part in the game show,” says Suzanne Seward, a grade 6 teacher in North Vancouver, BC. “And my gifted student loves it too.”

If you follow our rules below, we believe you’ll find, as we have, that gamification has a lot of benefits for education. It can be great for classroom management and it can help you engage very diverse learners. Teachers tell us their students are learning 21st century skills like collaboration, brainstorming and design thinking. One year later, 87.5 per cent of parents told us they were still doing at least one of the new environmental missions their children had initiated as part of the Planet Protector Academy.

That, my friends, is the power of the game.

Our Secret

First, I’ll lay out the basic five components of gamification, which you can apply to almost any aspect of the classroom. Then I’ll provide our Waste-Free Lunch Mission activities so you can see how we apply these components to the Planet Protector Academy, and try them for yourself with your class.

Broken down into its component parts, gamification is actually easy and fun. You can make virtually any aspect of your classroom a game, but here we’ll focus on eco-outcomes. But first, what are we talking about?
**Definition**
Gamification is the use of game design elements in a context that isn’t usually considered a game – like education. In other words, we’ll turn your classroom into a big real-life game.

**Benefits of Gamification**
- Helpful for classroom management
- Increases engagement in the subject matter
- Makes learning more fun
- Speaks kids’ language
- Increases student motivation
- Increases cooperation among students (if you play it right)
- Great for diverse learners
- Can be used for almost any aspect of classroom experience or any subject area
- Particularly useful to encourage collaboration, cooperation and brainstorming.

**How to Gamify Your Classroom (kindly)**
There are five key components to bringing gamification into your classroom:
- Teams
- Points
- Levels
- Goals
- Rewards

**Teams**
Divide your class into four teams. In the Planet Protector Academy, we give each team an element: earth, air, fire and water. Allow the teams to come up with a name for themselves. The fire team might be the Volcanoes. The earth team might be the Thunder Chickens. You get the idea.

**Points**
Teams can earn points for almost anything! Keep score on your whiteboard/blackboard or have students design a fun/themed paper chart. Points are collected by the team as a whole, but can be earned either by individuals or as a group, depending on what is being rewarded. For example, one student who has a hard time sitting still might gain points for her team for being quiet during reading time, while a team could receive points for working together well. What this means in practice is, that each team member has a personal interest in the success of his or her teammates. This translates, in our experience, into active support and help between students, cheering of teammates’ success, and a great classroom atmosphere. You will not believe how eager students become to see another point added to their team!

If your teams have uneven numbers of students, you may decide not to award points for individual behaviours, or to provide smaller teams with extra ways they can earn points.

Some examples of things you can award points for:
- Answering questions in class. You can assign points for effort, and extra points for correct answers, as you choose. We turn answering questions into a game show! (see Activity section)
- Completion of in-class assignments and tasks, individually or as a group
- Behaviour
- Study habits
- Homework
- Parent forms returned
- Environmental behaviours improved (eg. having a waste-free lunch)
- Teamwork and inclusion

Now, in our Academy, we leave it up to teachers how many points they want to give for these things. You can create a rubric for yourself of point allocation. See the table below.

We were curious about how the inter-team competition would impact classes as a whole, in particular the celebration of one team over the others as the winning team. When asked, however, children almost unanimously reported that the Academy was so fun that they didn’t mind whether they won or lost.

Giving points for teamwork and inclusion is the heart of making games kind, and, I believe, the real reason that children don’t mind losing at our Academy: because it feels so good to cooperate and have fun learning.

The way to make games kind is actually very simple: tell your students that no one wins without serious teamwork points. Remind them during activities that teamwork points will be awarded, and it will amaze you how inclusive children will become! Before we added teamwork points to the early Planet Protector Academy tests, children were excluding each other in their rush to win. Once teamwork points were in, teachers were remarking on how easy classroom management was, and how everyone was participating.

Michele Reid, a grade 4/5 teacher in Port Coquitlam, BC, raved about the benefits of gamification her class experienced through our Academy: “You have no idea how much the teams and points helps classroom management! We’re going to stay in teams all year.”

**Activity** | **Points** | **Earth** | **Air** | **Fire** | **Water**
---|---|---|---|---|---
Daily homework completion | 1 point per subject per student | | | | |
Participation in class discussions | 3 points per team per day | | | | |
Working well together | 2 points per team per day | | | | |
Tidy workspace | 2 points per team per day | | | | | (etc.)
Two. etc.), or with colours or other codes (Green Level, Awesome Level). Another way of looking at a level is through your curricular goals: a level could be finishing a project, chapter, book, test, unit, you name it. You could have levels throughout the year culminating in a final winning team at the end of the year. You could use them on a specific curriculum unit with five modules, each module becoming a level.

Our activities, below, aren’t really long enough for levels, but they’ll give you an idea of how to turn curriculum into a game. Add another eight questions, and you’ve got yourself a level!

If you decide to integrate gamification more widely in your classroom, the points could get astronomical. One way around this is to note which team won a certain level, and then to begin the points count at zero for the next level. The winning team at the end is the team that won the most levels over time.

Rewards
Kids love rewards! If teams reach a certain number of points, decided by you, they can receive certain benefits, such as free time, eating in class, computer time, etc. You can also download images of badges from the internet and award them to teams or individuals.

Missions
Each week in the Planet Protector Academy, the students go home with missions to change their families’ environmental behaviours: they get a point for their team every time they remind their families to turn off lights, for example.

You can assign an at-home mission of any kind, including curricular. Teams get points for every member who completes the mission, which means that they have a vested interest in helping each other be successful. This cooperation and mutual encouragement is one of my favourite parts of our program.

A great benefit of these at-home missions is how they connect the families with what’s happening inside the classroom. One fun thing we realized about our program is that we had thousands of young people taking our environmental messaging home and translating it to their parents in their mother tongue. So you could award points for children helping their parents to understand something you’ve had a hard time communicating!

Games are limitless in their possibilities
Once you get going, you can let your creativity fly! Students can make their own avatars (game characters), create team costumes, write team songs, etc.

I hope that you find that adding gamification into the classroom brings great benefits to everyone in your class. Over at the Planet Protector Academy, we find that teachers keep discovering new ways to use games to inspire learning. Have fun!

Activity: The Planet Protector Game Show
Grades: Intermediate, however you can apply the principals to any grade/content.

The Planet Protector Game Show is one of the students’ favourite parts of the Academy. A lot of curriculum can be turned into a game show. The idea here is based on the beginnings of the inquiry-based learning process: in other words, we are not expecting the students to know the answers, we are inviting them, in a fun way, to think about what the answers might be.

The game show activities given here are from our new Planet Protector Academy: Zero Heroes, a program about waste. This module is about packaging and waste-free lunches. If you like, you can check out our website for a waste-free lunch video, downloadable zero waste activity pages and a music video about single use plastics. See the link at the end of the article.

Game Show How-To
Divide your class into four teams and allow the teams to decide upon a team name, based on the four elements: earth, air, fire and water.

Once your class is divided into teams, explain the rules:

• For each question, one member from each team comes to the front of the class.
• When they get to the front, they get a point if they make a Planet Protector pose
• To be the first to answer, instead of raising your hand, “buzz in” – put your hand on your head and make a sound like a buzzer.
• Each person gives their best answer.
• Points can be awarded for being the first to answer, trying hard, thinking outside the box, getting the correct answer, being quiet quickly, etc.

**Music Video:** For a fun and engaging way to start the Planet Protector Game Show, watch our Disposables Rap (see our website at the end of the article), about single-use items.

Bring one representative from each team to the front of the class to answer the first question. So, now four students are at the front of the room. Tell the students that they can buzz in to be the first to answer. Read the first question. The first to buzz in answers, then each of the other three has a chance. Read the correct answer out loud, and if you like, discuss the answer. Remember, the point is not for the children to know the answer ahead of time; the point is to engage in the questions, so that when the answer is revealed, students’ brains have already been wrestling with the question. Then, bring up a second set of students, one from each team, and repeat.

**Sample game show questions:** (for answers, visit our website listed in the resources section)

• What is packaging?
• What is packaging made of?
• Why is packaging problematic?
• What’s a waste-free lunch?
• List five items you’ll need for a waste-free lunch
• What’s a single-use item?
• Name 5 single use items.
• What could you use instead?
• Why are single use items problematic?

**Brainstorming**

You can also use the game show format for questions that are more complex and require deeper thinking. Instead of having individuals come to the front to answer, have the teams stay together, and brainstorm possible answers. This can become the students’ mission, to reduce their lunch garbage as a class.

In teams, look at your lunches or your snacks, find two or three ways to make less garbage next time.

If someone already has a waste-free lunch, think about the packaging the items come in from the store. Is it recyclable? How much packaging is there compared to the size of the product? How could packaging be improved? There’s a whole system behind everything. Start looking for it.

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**Vanessa LeBourdais** is the Executive Producer and Creative Director at DreamRider Productions, a national Canadian environmental education charity. Over the past 17 years, Vanessa’s and her team’s arts-based programs on zero waste, climate, water and littering have reached over 900,000 elementary school children in 900+ schools. Their latest digital classroom resource, the Planet Protector Academy (planetprotectors.ca) won the 2014 TELUS Innovation Award.

**Resources**

More Planet Protector Academy information and free resources at http://bit.ly/gamifyclassroom

“Planet Protecting Superheroes: Using Story and Arts-Based Activities in Environmental Education” by Vanessa LeBourdais, Green Teacher magazine issue 105.

Jane McGonigal’s book, Reality is Broken, or her TED talk http://ed.ted.com/on/uk36wtoi

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