

Activity #3

Frogs on Floor Four!

Length:

One class period, with reading assignment

Prerequisite Activity:

None

Objectives:

- Calculate the direct and indirect costs of a coqui frog infestation at an imaginary resort, based on real life scenarios.
- Create a budget that approaches the invasive species issue from a businessperson’s perspective.
- Present the budget and articulate reasoning behind decisions made to classmates.

Vocabulary:

Alien

Eradicate

Native

Amphibian

Infestation

Nocturnal

Density

Invasive

●●● Class Period One: *Developing Resort Budgets*

In Advance:

Have students read Student Pages “A Most Unwanted Neighbor - Coqui Frogs,” pp. (11-12) aloud in class or assign as homework.

Materials & Setup

“Coqui Calls” audio file on the DVD included in this curriculum or on www.hoikecurriculum.org.

For each student:

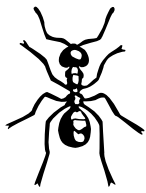
- Student Page “A Most Unwanted Neighbor - Coqui Frogs” (pp. 11-12)

For each group of four to five students:

- Student Pages “Frogs on Floor Four.” (p. 8-10)
- One wild card (from the Teacher Background “Wild Card” page (pp. 4-7))

Instructions

- 1) Play the “Coqui Calls” recording of coqui frogs for the class. Ask students if they know what the sound is. Tell them it is the mating call of the coqui frog (*Eleutherodactylus coqui*), pronounced: ee-looth-er-o-dact-y-lus co-kee. Ask students if they would be able to sleep while that sound continued through the night.



Activity #3

Invasive Species Unit 2

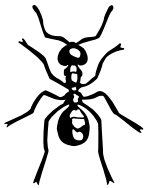
- 2) Review the reading assignment.
- 3) Tell students that they will be acting as the owners and managers of a large resort on Maui that is infested with coqui. They will investigate the financial costs of coqui frog outbreak, based on real numbers from a local resort's budget. Divide the class into groups of four to five students. Explain that each group is in charge of developing a budget for their imaginary resort.
- 4) Hand out the Student Pages "Control Strategies," and "Resort Budget" to each group. Have each group select a) a general manager who will facilitate the group's discussion and make sure it completes its assignment, b) one or two administrative assistants to do the math c) a secretary who will fill out the "Resort Budget," and d) a public relations spokesperson who will present the group's plan and rationale to the class. (They can also choose a name for their resort.) Tell them to fill out an annual budget, based on their hotel's expenses and revenues. Allow students to work together for 20 minutes.
- 5) After your students have completed their initial budget, tell them that midway through the year the coqui situation has changed. Pass out one wild card per group. Give groups 5-10 minutes to discuss how this might affect their strategy and revise their budget accordingly for the second half of the year. When they are complete, they will present their budgets and the reasoning behind their choices to the class.
- 6) When approximately 25 minutes of the class remains, have each group's spokesperson give a 3-5 minute overview of the group's budget.
- 7) At the end of class, ask students to discuss what they learned by doing this activity. Which choices turned out to be the most financially prudent and why?

Journal Ideas

- All business owners need to prioritize expenses and estimate long and short term costs. Which of the coqui scenarios seemed likely to occur? Which seemed less likely? Why?
- Do you think legislation making it illegal to harbor coqui frogs on your property is a good idea? Why or why not?
- Can you think of other strategies for dealing with a coqui frog infestation at a resort? Describe.
- What other ways might invasive species affect people's finances?

Assessment Tools

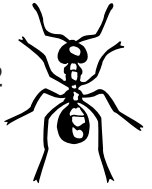
- Group participation and class presentations
- Student Pages "Resort Budget" and "Resort Budget Explanation"
- Journal entries



Teacher Version

Resort Budget - Sample Answer Key (for Control Strategy A "Do Nothing" with "Maui County Council" Wild Card)

| | <i>Base - Annual</i> | <i>Revision due to Coqui</i> | <i>Midyear Revision</i> |
|---|------------------------------|-------------------------------|-------------------------|
| Revenue | | | |
| 200 rooms x \$300 x 365 x occupancy | 100% occupancy 21,900,000 | (80% occupancy) 17,520,000 | |
| Food & Beverage (and other) | 5,000,000 | 4,600,000 | |
| Revenue Subtotal: | 26,900,000 | 22,120,000 | |
| 10% tax (based on revenue listed above) | 2,690,000 | 2,212,000 | |
| Add Total Revenue: | 29,590,000 | 24,332,000 | |
| Expenses | | | |
| (Expenses in bold are fixed; they stay the same regardless of occupancy.) | | | |
| 7.25% Occ tax | 1,587,750 | 1,270,200 | |
| 4% GE tax | 1,183,600 | 973,280 | |
| Management Staff | 2,700,000 | 2,700,000 | |
| Housekeeping | 2,200,000 | 1,176,000 | |
| Landscaping/Engineering | 1,000,000 | 1,000,000 | |
| Reception, Bell Desk, Valet | 2,200,000 | 1,176,000 | |
| Utilities | 1,900,000 | 1,520,000 | |
| Laundry | 420,000 | 336,000 | |
| Pool Cleaner | 50,000 | 50,000 | |
| Phone and Internet | 125,000 | 125,000 | |
| Property Insurance | 900,000 | 900,000 | |
| Property tax (\$12 per \$1,000 of assessed value) | 1,000,000 | 1,000,000 | |
| Food & Beverage and Other (Sales, Administration) | 3,000,000 | 2,400,000 | |
| Marketing Expenses | 1,000,000 | 1,000,000 | |
| County fine | | | 10,000 |
| Outside company to spray citric acid \$200 per hour @ 25 hours | | | 5,000 |
| Add Total Expenses | 19,266,350 | 15,626,480 | 15,641,480 |
| Net Income or Loss (Total revenue minus total expenses) | 10,323,650 | 8,705,520 | 8,690,520 |



Teacher Background

Wild Cards

Cut out the following wild cards. Midway through class, pass out one card to each student group. The letters correspond to the strategies they chose initially. For example, if they chose A) Do Nothing, they should respond to the A) instruction on their wild card. Tell them to revise their budget accordingly for the second half of the year. When they are complete, they will present their budgets and the reasoning behind their choices to the class.

Maui County Council has passed legislation making it illegal to harbor frogs on your property.

A or E: Choose another strategy and pay the County \$10,000 in fines.

B or C: No change in budget.

D: Choose another strategy and pay the County \$500 in fines.

TripAdvisor reviews condemn hotels with frogs, describing horrors of sleepless nights.

A: Reduce your occupancy revenue by 50 percent.

B or C: Increase occupancy revenue by 25 percent. Guests are booking rooms at your hotel, rather than at those infested with coqui.

D: No change in budget. Since your strategy keeps the frog population down but does not eliminate it entirely, you don't lose revenue, but you don't gain any either.

E: Reduce your occupancy revenue by 30 percent; some of your advertising in favor of frogs was effective.

Landscaping department plants areca palms infested with frog eggs.

A or E: No change in budget.

B: Pay employees \$600 to re-treat.

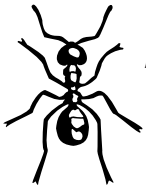
C: Pay outside company \$1,000 to re-treat.

D: The children's camp is overwhelmed and can't keep up with the growing frog population. Choose a new strategy and balance budget accordingly. (Include the expenses for both strategies.)

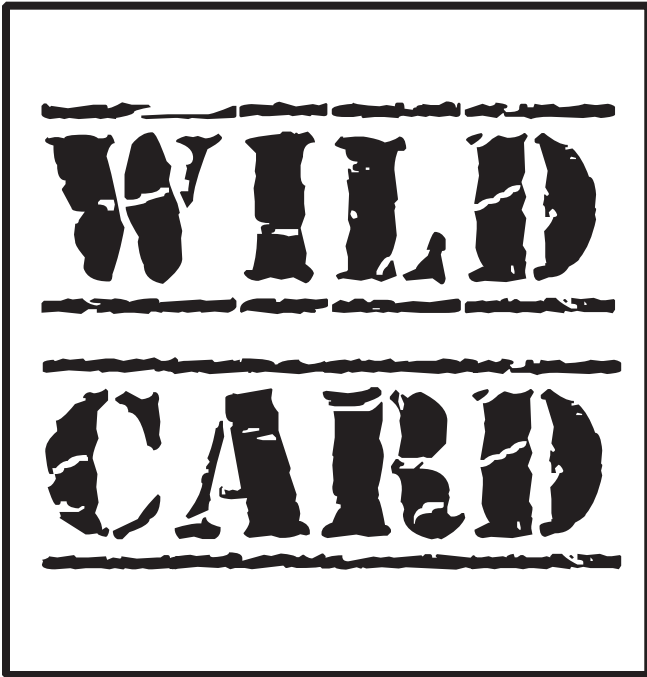
Coqui frogs become accepted.

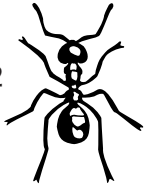
A, B, C, or D: Reduce revenue by 5 percent. While most guests have come to accept another pest, some still can't sleep with frog noise and stop coming to Hawaii altogether.

E: Increase revenue by 5 percent; now that people accept the frogs, your hotel is well positioned to be a tourist attraction.



Activity #3
Invasive Species Unit 2
Copy Master Back





Brown tree snakes invade Maui.

A or E: Now that Maui is crawling with snakes, nobody cares about the frogs, right? Wrong. Snakes feed on coqui and promptly infest your property. People are terrified to bring their children to your resort. Reduce occupancy by 85 percent.

B or C: No change in budget.

D: The camp counselors refuse to catch snakes and quit. Choose a new strategy.

Neighbors sue when frogs infest their property.

A or E: Pay \$150,000 in legal fees, plus the cost of professional treatment (Control strategy C).

B or C: You don't have frogs; no change in budget.

D: You have a few frogs, but not enough to warrant a lawsuit. The judge dismisses the case. Pay \$500 in legal fees.

Coqui frogs bring property values down; investors back out.

A: Go bankrupt.

B or C: You don't have frogs; no change in budget.

D: You have frogs, but in small enough numbers that they can be still be effectively controlled. Choose a new strategy.

E: Sell your company for a loss to frog researchers from Puerto Rico.



Activity #3
Invasive Species Unit 2
Copy Master Back

