Business Plan

Stop School Pests -

A National IPM Standard Training and Certification Program

*Drafted by*

Thomas Green, Alina Eva Freund

IPM Institute of North America Inc.

Version 09/16/16

This document is for internal use and is succinctly formatted for simplicity, functionality and ease of modification as we implement, evaluate, learn and adapt our plan accordingly. It reflects our willingness to look at our strengths and weaknesses honestly, and our commitment to make changes needed to ensure the long-term growth of the Stop School Pests program.

Table of Contents

Contents

[A. Stop School Pests Project Team and Collaborators 3](#_Toc463953154)

[B. Scope and purpose of the project 4](#_Toc463953155)

[C. Situation Analysis 5](#_Toc463953156)

[D. Goals 7](#_Toc463953157)

[E. Overarching Strategies 7](#_Toc463953158)

[G. Time Line 10](#_Toc463953159)

[H. Marketing and Outreach 11](#_Toc463953160)

[I. Financials 13](#_Toc463953161)

[Appendices 14](#_Toc463953162)

[Appendix A. Analysis Learning Management System 15](#_Toc463953163)

[**Commercial LMS vs development of website** 15](#_Toc463953164)

[**Software Analysis** 16](#_Toc463953165)

[FAQs 16](#_Toc463953166)

[Priority Schools 18](#_Toc463953167)

[Outreach Tool Kit 19](#_Toc463953168)

[Learning Objectives 20](#_Toc463953169)

A. Stop School Pests Project Team and Collaborators

**National Pest Management Association**

Ali Taisey

**Oregon State University**

Tim Stock

**University of Arizona**

Dawn H. Gouge

Al Fournier

Lucy Li

Shaku Nair

Dave Kopec,

Paul Baker

Kai Umeda

**University of Illinois**

Susan T. Ratcliffe

**Washington State University**

Carrie Foss

**iSchool Pest Manager project team**

Janet Hurley

**IPM Institute of North America Inc.**

Alina Eva Freund

Kelly Adams

Thomas Green

B. Scope and purpose of the project

**Background**

* The *National School IPM Working Group Joint Steering and Advisory Committee* is a diverse group of professionals who are working to improve children’s environmental health through implementing Integrated Pest Management (IPM) in K-12 schools throughout the U.S. Working group members are primarily funded by grants and work on projects and programs that support IPM education and practices.
* The goal of the [School IPM 2020](http://ipminstitute.org/school_ipm_2015/SCHOOL_IPM_2015_v2%200_DRAFT_FOR_COMMENT_071111.pdf) plan is for every U.S. public school to be practicing high-level IPM. The term “high-level” refers to the high end of the IPM continuum, which describes the progression of pest management strategies from **high-risk, reaction-based action** towards **least-risk, long-term prevention and avoidance of pest problems and pest-conducive conditions**.

**Stop School Pests Project**

* Stop School Pests was initiated to address the need for a **recognized standardized, peer-reviewed national IPM training program**.
* The program is a collaboration between extension, university, government, private and non-profit organizations and individuals collaborating.
* Funded by **US EPA Office of Pesticide Programs** and the **USDA North Central IPM Center**.
* Building largely on existing “best-of-the-best” material, Stop School Pests offers training modules for administrators, facility managers, pest management technicians, grounds staff, custodians, maintenance staff, nurses, food service staff and teachers.
* Modules will be available both **online** and **in-person** for training session.
* Facility managers and IPM technicians will gain **certification** through completion of training and passing an exam.
* Administrators, grounds staff, custodians, maintenance staff, nurses, food service staff and teachers will be able to earn a **certificate** through the completion of training and passing a quiz.

C. Situation Analysis

**Strengths**

* Stop School Pests is the **only national standard training/certification program that addresses all school roles and offers training materials online and for in-person use, along with the opportunity to earn certification/certificates**.
* Learning objectives, lessons and exam and quiz questions were evaluated by a **review committee of 32 professionals and others from a wide variety of professional backgrounds**.
* Participation delivers multiple benefits to target audiences:

- improving food safety

- fire safety

- energy conservation

- employee satisfaction

- pest and pesticide risk reduction

* Teaching and exam materials were field tested in schools and refined pursuant to trainers and trainee feedback to create a high quality product.
* The program offers an opportunity for reviewer approval of learning lessons and exams/quiz questions required for continuing education credits.
* The program has buy in from a broad group of change agents working towards school IPM 2020. These mechanics may encourage region specific training, e.g., detailed training for pest presence in specific parts of the country.
* Program has received substantial start-up funding from US EPA ($250,000) and North Central IPM Center ($10,000).
* The *National School IPM Steering Committee* could provide a low-cost Stop School Pests management option, with AgriLife Extension, IPM Institute and/or other entity providing low-cost administration, similar to the IPM Symposium model.
* Training that is mandatory in Texas, Maryland, Oregon and Maine for IPM coordinators can utilize Stop Schools Pests.
* Training materials and quiz/exam questions will address emerging issues and stay relevant.
* Training material will be available to download and tailor for specific purposes; lessen burden on state agencies that provide services to entities that require training.
* Stop School Pests will link to iSchool Pest Manager website and mobile application.
* Facility managers and administrators may be interested in reviewing all training modules. They then could advocate for school staff to participate in training themselves or use training materials to train staff themselves.

**Weaknesses**

* The training program is national in scope; it will not go into the level of detail specific to regions that some school staff will benefit from.
* Educators are required to pay for all certification programs, Stop School Pests would be one among many options if users were charged a fee.
* Technological solution has to date not been decided on and financial model has yet to be developed.
* The program lacks a hands-on component and will serve primarily to increase awareness rather than skills development.

**Opportunities**

* Nearly four million potential participants.
* The program provides recognition to those that complete the training, either through a certificate or certification, and a signed letter to the successful participant from the US EPA Office of Pesticides Programs.
* All training will be submitted for continuing education credit approval to state licensing/certification programs for pesticide applicators, school nurse, food service staff, etc.
* Encourage school districts to require Stop School Pest certification/certificates for in-house and contracted PMPs.
* *U.S and Regional EPA offices*, *U.S Department of Education*, *Healthy Homes and Lead Hazard Control*, *Centers for Disease Control and Prevention* and *State Departments of Education* can be encouraged to promote participation.
* *NPMA, Green Pro, Green Shield Certified* and *PLANET* can encourage or require participating companies to get their pest management technicians serving schools certified.
* Organizations including PTA, School of Business Officials Association and school facility manager associations can be recruited to assist with outreach and provide training events in conjunction with their events and training.
* National IPM Working Group with more than 225 members can be provided with resources and recruited to do outreach to school districts, pest managements professionals and land care professionals that they work with.
* On-line format will allow us to easily capture contact information for ongoing communication, e.g., pest presses, newsletters.
* Stop School Pests has the opportunity to link to external award programs.
* Program has potential to increase cooperation between contracting staff and in-house staff.
* Collaboration with [ServSafe](http://www.servsafe.com/home)
* Training program supports and encourages train-the-trainer opportunities.
* Risk managers/insurance companies could require participation and offer a discount on polices.
* Educators will utilize IPM to teach the common core standards and STEM.
* Offer a discussion board to participants where movies, pictures, etc. can be uploaded and a Q&A or discussion can take place.

**Challenges**

* Even low fees will be a barrier to participation; the cost to a school district to process the payment may be more than the fee we’d need to charge to break even.
* School budgets are tight; we lack information on appropriate fee schedule that will ensure participation.
* Current grant funding was sufficient for initial development through ten modules only; roll out including outreach is unfunded and feasibility of fee based support is untested.
* Competition with organizations that offer training opportunities.
* Potential conflicts with private contractors versus educated change agents
* Facility manager commitment to participate in all modules in order to gain an understanding about all school staff’s role in IPM (their input is critical).
* Difficult to track how often training material will be downloaded/used and how many individuals were trained.
* Identifying the ideal platform for offering training and administering the quiz/exams.

D. Goals

* Become the premier nationally recognized training program for IPM in schools.
* Expand into pre-school, healthcare and other environments.

E. Overarching Strategies

* Establish *National School IPM Steering Committee* as the directing body.
* Maintain an ongoing technical review and advisory committee of leading professionals involved in school IPM.
* Build value to create and sustain support from sponsorships to eliminate participant fee.
* Training, exams and quizzes will be of excellent quality and updated regularly.
* Stop School Pests will be available online on a user-friendly, professionally designed website**.**
* Learning lessons will be accessible to anyone and are free. Certification/certificates are earned by passing exams/quizzes which will be offered free and supported through sponsorship, designed to sustain maintenance and continued development of the program.
* Promotion will be coordinated with highly visible, credible, agencies and organizations working with and representing our target audiences.

F. Specific Objectives, Strategic and Action Steps

**Development and Maintenance**

* **2014 and 2015 Objectives (completed)**
	+ Complete objectives for all nine school staff roles.
	+ Complete in-person/online version for Introduction, Custodian Modules, Grounds, Facility Manager and Teacher.
	+ Complete in-person/online version for Nurse, Administrator, Food Service and Maintenance Modules.
	+ Complete exams/quizzes for all modules.
	+ *Pilot minimum of 3 sessions for each module and update modules accordingly.*
* **2016 Objectives**
	+ Develop final document package that will accompany the training in person, online and per download.
	+ Load onto central location with seamless links from iSchool Pest Manager, StopSchool Pests, and eXtension websites
	+ Decide on Learning Management System for future training.

**Outreach**

* **2014 and 2015 Objectives**
	+ Develop Outreach Tool Kit for NPMA, Green Shield Certified, PLANET
	+ Develop Announcement Letter for Healthy Homes and Lead Hazard Control, Center Centers for Disease Control and Prevention and State Departments of Education (Appendix).
	+ Identify organizations Outreach Tool Kit should be sent to.
* **2016 Objectives**
	+ Develop outreach materials.
	+ Develop marketing one- pager.
	+ Develop and conduct outreach campaign to announce availability of training.

**Management**

* **2016 and 2017 Objectives**
	+ Identify individuals to be part of a virtual focus group to assess what fee target audience is willing to pay to participate in program.
	+ Host virtual focus group for administration and other potential participants.
	+ Identify individuals interested in being part of a technical advisory committee.
	+ Establish *National School IPM Steering Committee* as the directing body.
	+ Decide how often participants need to be recertified.
	+ Finalize fee for participating in exam/quiz.
	+ Launch modules online.
	+ Identify organizations to sponsor program.
	+ Finalize sponsorship plan in order to not charge fee for participating in exam/quiz.

G. Time Line

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** |
| **Development and Maintenance** | * Complete objectives for all nine school staff roles.
* Complete in-person/online version for Introduction, Custodian Modules, Grounds, Facility Manager and Teacher.
* Complete in-person/online version for Nurse, Administrator, Food Service and Maintenance Modules.
* Complete exams/quizzes for all modules.
* *HTML conversion of all modules and load onto eXtension.*
* *Pilot minimum of 3 sessions for each module and update modules accordingly*.
* Identify pilot sessions.
* Set up pilot school test sites and gather feedback.
 | **x** | **x** |  |  |  |  |
| * Develop final document package that will accompany the training online and per download.
 |  |  | **x** |  |  |  |
| **Outreach** | * Identify organizations Outreach Tool Kit should be sent to.
* Develop Outreach Tool Kit for NPMA, Green Shield Certified, PLANET (Appendix.
* Develop Announcement Letter for Healthy Homes and Lead Hazard Control, Center Centers for Disease Control and Prevention and State Departments of Education (Appendix).
 | **x** | **x** |  |  |  |  |
| * Develop outreach materials
* Develop marketing one pager.
 |  |  | **x** |  |  |  |
| * Conduct outreach campaign to announce availability of training
* Identify organizations to sponsor program.
 |  | **x** | **x** | **x** |  |  |
| **Management** | * Identify individuals to be part of a virtual focus group to assess what fee target audience is willing to pay to participate in program, if any.
* Host virtual focus group for administration and other potential participants.
* Identify individuals interested in being part of a technical advisory committee.
 | **x** | **x** |  |  |  |  |
| * Research opportunity to use this training for CEU for different roles.
 |  | **x** | **x** |  |  |  |
| * Decide how often participants need to be recertified.
* Choose software program.
* Establish National School IPM Steering Committee as the directing body.
* Identify organizations to sponsor program.
* Finalize sponsorship plan in order to not charge fee for participating in exam/quiz.
* Finalize fee for participating in exam/quiz.
 |  |  | **x** |  |  |  |
| * Launch modules online
 |  |  | **x** | **x** |  |  |
|  |  |  |  |  |  |  |

H. Marketing and Outreach

**Marketing Plan**

****

I. Financials



Appendices

1. Software Analysis
2. FAQs
3. Priority Schools
4. Outreach Tool Kit
5. Learning Objectives

Appendix A. Analysis Learning Management System

**Commercial LMS vs development of website**

|  |  |  |
| --- | --- | --- |
|  | **Strengths**  | **Weaknesses** |
| **Commercial, Fee-Based LMS** | * Fast set up (within a month)
* Professional IT and customer support
* Responsibility for technology taken care of by professionals
* No added costs for software updates
* Customer support through 3rd party
* Quick option to move project ahead fast and start offering training
* Scales easily later on as user numbers increase
* Potential to apply for grant funding
 | * Fees which include purchase/start-up fee and monthly fee based on number of users which is currently unfunded
* Price increases as user numbers increase
* Higher risk that fees exceed revenue as users increase
* Budget not yet secured, will add to later delivery of LMS
 |
|  |  |  |
| **Custom developed website** | * Potential to apply for funding through a grant
* Collaborate with mission driven service provider *Center for Invasive Species and Ecosystem Health* and further strengthen connection
 | * Dependent on schedule and availability of Center for Invasive Species and Ecosystem Health, potentially less control over time schedule
* Potentially added costs for software/ website updates and implementation
* Added cost for customer support provided by us or pay for someone to do it
* Less control over costs
* Possibly less professional layout and usability
* Possibly higher risk in terms of time and budget
* Possibly longer term project since development takes more time vs. commercial LMS where funding development may take more time
* Budget not yet secured, potentially will add to later delivery of LMS
 |
|  |  |  |
|  |  |

**Software Analysis**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Software** | **Price - month** | **Price - year** | **Pro** | **Con** |
| ~~MOODLE~~ | Free  |  | X | Many schools cannot use software due to security firewallsTypically requires contracted expert help to set up. |
| Accord | $200 – 295$500 – 495$1,000 – 745 | $3,540 (200 users)$5,940 (500 users)$8,940 (1000 users)Set up fee $2,000 - 3,000  | Fixed price for increments of users | Price for +1000 users not clear |
| [*eLeap*](http://www.eleapsoftware.com/pricing/) | *$1112.05 - 200 users**$112.5/ month + $5/user, reduced pricing as users increase* | *$13,350$ (200 users)* | *No set-up fee*  | *Fee per users can eventually skyrocket costs as users increase*  |
| [*Litmos*](http://www.litmos.com/litmos-learning-management-system/?utm_source=capterra&utm_medium=cpc&utm_campaign=training_product_link#pricing) | *Bronze* *$99 a month = 25 users, $5 for over**Upgrade to $300 month = 100 users*  | *$13,188 (225 users)**$3,600 (100 users)* | *No set-up fee, %15 NP.*  | *Price per user rapidly increases costs* |
|  |  |  |  |  |

FAQs

**1. What is IPM?**

**A.** Integrated Pest Management (IPM) is a proven approach that focuses on prevention of pest problems using methods that have minimal impact on human health and the environment.

 IPM is common sense. IPM practices include sound preventive maintenance, high sanitation standards and staff education, along with pest monitoring, accurate pest identification and recordkeeping.

* *Bottom line: don’t attract pests, keep them out. Get rid of them if you are sure you have them using the safest, most effective method*.

**2. Why is school IPM relevant to my school?**

* Fewer missed school days for students and staff from better indoor air quality and fewer pests and pest-related allergens.
* Lower teacher turnover resulting from higher quality indoor environments, including air quality, lighting and school maintenance.
* Increased productivity as a result of healthier, more comfortable students and school staff.

**3. Is school IPM more expensive?**

**A.**  IPM can reduce pest complaints by 78% to 90% with no long-term increase in costs.

**4. Is school IPM more work?**

**A.** Do what you are doing now, just think pests. With a proper school IPM program in place, pest management will take less work in the future because it is focused on prevention.

**5. Is school IPM anti-pesticide?**

**A.** Choosing to use pesticides should be the last option for pest management. However, when needed, pesticide products can be selected that minimize risks to students and staff.

**6. Should schools avoid any pesticide use?**

**A.** In an ideal world, the answer may be yes. IPM stresses advocates using the least harmful method to manage pests. If all other methods have failed, then pesticide use may be necessary. Many states have laws requiring parental notification prior to pesticide applications, as well as posting pesticide application warnings at applications sites.

**7. If pesticide use is legal, isn’t it just as good a choice as any other legal pesticide use, or non-chemical approach?**

**A.** Just because something is legal, doesn’t mean it is the healthiest, best choice and should usually be used in moderation. If there is a safer, cheaper, more environmentally friendly option, why not use it?

Priority Schools

**Arizona**

1. Maricopa Wells Middle School, Maricopa Unified School District. Contact: Daniel Vezie, Environmental Supervisor (dvezie@musd20.org)
2. Orange Grove Middle School, Catalina Foothills Unified School District. Contact: Tiffany De Alva, Facilities Project Manager (tdealva@cfsd16.org)
3. Esperero Canyon Middle School, Catalina Foothills Unified School District. Contact: Tiffany De Alva, Facilities Project Manager (tdealva@cfsd16.org)
4. Metro Tech High School, Phoenix Union High School District. Contact: Anthony Scarfo, Quality Assurance and Sustainability Specialist (scarfo@PhoenixUnion.org)
5. Ishikawa Elementary School, Mesa Public School District. Contact: William “Ed” Stallard, Safety and Training Supervisor (westallard@mpsaz.org)
6. Highland High School, Gilbert Public School District. Contact: David Lee, Environmental Supervisor (Dave.Lee@gilbertschools.net)

Outreach Tool Kit

* 1. Template news item for website or newsletter
	2. Template web copy for social media, blogs
	3. Press release for media contacts, placement in industry publications
	4. *An application to have an organization’s training materials reviewed by Stop School Pests to asses if they qualify for continuing education requirements for pest management professional and facility manager certification.*

Learning Objectives

 **(1) Module: Introduction to School IPM**

*Learning Lesson 1: WHAT is IPM:*

1. Describe IPM in understandable terms.
2. Describe how IPM reduces the risks of pests and pesticides.
3. Explain the benefits of IPM in schools and other sensitive environments.
4. Identify the key elements of IPM.

*Learning Lesson 2: WHY do IPM:*

1. Identify health, environmental, and economic risks of pests associated with buildings and grounds.
2. Identify health, environmental, and economic risks of pesticides associated with buildings and grounds.

*Learning Lesson 3: WHO does IPM:*

1. Identify the important roles and responsibilities of the school IPM team.

*Learning Lesson 4: HOW to do IPM:*

1. Explain basic pest monitoring, inspecting and reporting.
2. Identify pest-conducive conditions and pest-vulnerable areas. Identify corrective actions.
3. Identify key pest groups and signs of pest infestations in buildings and on grounds.
4. Explain how to keep pests out of facilities.

**(2) Module: Custodial**

*Learning Lesson 1: School IPM for Cleaning Professionals*

1. Describe the key elements of sanitation and exclusion, including:
2. strategies
3. tactics
4. tools
5. Describe key elements of inspection and monitoring, including:
6. what to look for
7. where to look
8. tools used
9. frequency
10. Describe key elements of data collection, recording and evaluation for:
11. sanitation
12. monitoring
13. inspection
14. Describe proper and thorough cleaning procedures, storage practices and maintenance.
15. Explain the importance of effective communication, education and cooperation between relevant parties.

**(3) Module: Facility Manager**

*Learning Lesson 1: IPM Policy and Pan*

1. Describe key elements of coordinating an IPM policy and plan, including:
2. Development
3. Approval
4. Implementation and maintenance

*Learning Lesson 2: Facility Manager Responsibilities*

1. Explain the importance of:
	1. Pest entry points
	2. Proper storage procedure
	3. Sanitation, exclusion, inspection and monitoring
	4. Timely work order follow-up
2. Describe effective ways to educate lead staff about IPM practices and explain the importance of communication between them.
3. Describe methods of tracking facility costs and IPM-related cost savings.
4. Describe how to start an IPM program at your school.

*Learning Lesson 3: Key Pest Groups*

1. Identify key exterior and landscape pest groups, including:
2. biting and stinging pests
3. flies
4. ants
5. cockroaches
6. rodents
7. common weeds
8. wood destroying insects

**(4) Module: Grounds Staff**

*Learning Lesson 1: Practices to Maintain Healthy Landscapes*

1. Describe the zone management approach.
2. The principles behind sustainable landscapes, including:
	* 1. Cultural Controls
		2. Physical Controls
		3. Biological Controls
3. Explain the importance of landscaping practices specific to pest exclusion.

*Learning Lesson 2: Cultural Turf Management Practices*

1. Understand cultural turf management practices including:
	1. Mowing
	2. Fertilization
	3. Irrigation
	4. Soil Analysis
	5. Aeration

*Learning Lesson 3: Common Turfgrass Weeds and Insects*

1. Identify plant species suited for site specific environmental qualities, pest pressures and use.
2. Identify and describe how to manage common turfgrass weeds.
3. Identify and describe how to manage common turfgrass insect pests.
4. Identify and describe how to manage common turfgrass vertebrate pests.

*Learning Lesson 4: Common Turfgrass Diseases*

1. Identify and describe how to manage common turfgrass diseases.
2. Describe how to avoid and reduce stresses on turfgrass.

**(5) Module: Teachers**

*Learning Lesson 1: School IPM for Teachers*

1. Explain the importance of communicating to parents the health and safety issues associated with pests and pesticides.
2. Explain the importance of annual notification/special notification to parents and students when pesticide applications are scheduled/made.
3. Explain the importance of removing or eliminating clutter in the classroom.
4. Give examples of proper food storage procedures.
5. Describe proper sanitation methods for pets in the classroom.
6. Describe students’ roles and responsibilities in implementing IPM in the classroom.

*Learning Lesson 2: Teaching IPM (using IPM as a curriculum element)*

1. Describe how IPM curriculum meets common core requirements for biology/biodiversity, ecology, evolution, problem solving, teamwork, etc.
2. Describe a lesson plan that incorporates IPM into science-related curriculum.

**(6) Module: School Nurse**

*Learning Lesson 1: Pest Biology and Behavior*

1. Describe pest biology and behavior of:
	1. bed bugs
	2. head lice
	3. scabies mites
	4. ringworm
	5. bees
	6. wasps
	7. ants
	8. spider/scorpions
	9. mosquitoes
	10. bats/rabies
	11. ticks
	12. stinging caterpillars
	13. fleas
	14. snakes

*Learning Lesson 2:*

1. Identify allergy and asthma triggers in classrooms, including:
2. mice
3. class pets
4. mold
5. cockroaches
6. Describe appropriate personal hygiene and facility sanitation measures to help prevent and/or reduce the spread of:
7. bed bugs
8. head lice
9. scabies mites
10. ringworm
11. Describe appropriate measures to help prevent and/or reduce encounters with mosquitoes, ticks, and stinging insects (fire ants, wasps, bees) on school grounds.
12. Describe the difference between a pest sighting and a pest infestation.

*Learning Lesson 3:*

1. Describe best practices for notifying parents and/or providing them with guidance to minimize the spread of bed bugs, scabies, lice and cockroaches that have been found in classrooms and homes.
2. Give examples of chemical sensitivity issues for children and young adults.
3. List acute and chronic symptoms of pesticide poisoning.
4. Give examples of emergency hotlines and resources.

**(7) Module: Food Service**

*Learning Lesson 1: Food Service Staff and IPM*

1. Identify common problem pests in kitchens and pantries, including:
2. ants
3. cockroaches
4. flies
5. rodents
6. Describe key elements of sanitation and exclusion, including:
7. strategies
8. tactics
9. tools
10. Describe key elements of inspection and monitoring, including:
11. what to look for
12. where to look
13. tools used
14. frequency
15. Describe proper and thorough cleaning procedures for
16. floors
17. corners
18. beneath equipment
19. drain areas
20. floor joints
21. Explain the importance of effective communication, education and cooperation between school staff.

**(8) Module: Administrator**

*Learning Lesson 1: Superintendents/Principals and IPM*

1. Describe key elements of coordinating an IPM policy and plan, including:
2. development
3. approval
4. implementation and maintenance
5. Describe how to uniformly enforce IPM policies.
6. Explain the importance of effective communication, education and cooperation between school staff, students and parents.
7. Explain the importance of working with contractors
8. Describe the concept of action thresholds for pests.
9. Explain the importance of investing in effective exclusion and sanitation programs.
10. Describe best practices for pesticide application notification.
11. Identify procedures for pesticide and non-chemical product evaluation to be reviewed and/or updated on a routine basis by an IPM or Health and Safety Committee.

**(9) Module: Maintenance**

*Learning Lesson 1: Maintenance Staff and IPM*

1. Explain the importance of routine, proactive maintenance to maintain structural integrity and prevent pest entry and pest conducive conditions.
2. Explain the importance of timely work order follow-up.
3. Describe the key elements of sanitation and exclusion, including:
4. strategies
5. tactics
6. tools
7. Describe the key elements of inspection and monitoring, including:
8. what to look for
9. where to look
10. tools used
11. frequency
12. Explain the importance of effective communication, education and cooperation between school staff.

**(10) Module: Pest Management Professional**

*Learning Lesson 1:*

1. Describe key elements of a facility IPM plan.
2. Identify key exterior and landscape pest groups including:
3. biting and stinging pests
4. flies
5. ants
6. cockroaches
7. rodents
8. common weeds
9. stored product and fabric pests
10. wood destroying insects
11. occasional invaders and other common occasional pests
12. Explain the importance of proper pest identification when selecting management strategies.
13. List examples of resources available to identify/verify common pest species and how to access them.

*Learning Lesson 2:*

1. Describe the concept of action thresholds for pests.
2. Describe elements of sanitation and exclusion, including
3. strategies
4. tactics
5. tools
6. Describe key elements of data collection, recording and evaluation for
7. pesticide application
8. monitoring
9. inspection
10. Describe key elements of inspection and monitoring, including:
11. what to look for
12. where to look
13. tools used
14. frequency

*Learning Lesson 3:*

1. Explain the importance of effective communication, education and cooperation between school staff and contractors.
2. Describe key elements of pesticide safety, including
3. personal protective equipment (PPE)
4. pesticide storage
5. spill clean-up
6. container disposal
7. Identify sensitive sites and describe limitations on pesticide selection for use in these environments.
8. Give examples of when pesticide use is appropriate, and when to select reduced-risk. pesticide products and application methods.