



Spy Club

Prepared for: Global Learning & Leadership

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EXECUTIVE SUMMARY

Objective

To actively engage K-12 students with STEAM concepts via a unique hands-on, integrated and inquiry-based spy club curriculum.

Goals

To help students prepare for future careers by introducing them to and engaging them in practical ways in which STEAM is incorporated in daily tasks while simultaneously sharpening their 21st century skill-sets.

Solution

By offering a club-based curriculum that offers inquiry-based teaching methods, there is little resemblance to the compartmentalized structure of the school-day which will appeal to students and increase the odds of participation as well as knowledge retention. Daily meetings will take place where participants will complete one training exercise followed by a mission to complete. The overarching narrative will drive the plot and support print motivation while the individual missions will incorporate STEAM literacy.

Project Outline

The summer club curriculum will run for 8 weeks with a total of 40 meetings.

The school-year club curriculum will run for 36 weeks with a total of 180 meetings.

Throughout the entirety of the program students are expected to develop the following skills:

- Speaking & Narrative Skills
 - Vocabulary
 - Reading & Phonological Awareness
 - Writing
 - Playing
 - Flexibility & Adaptability
 - Initiative & Self-Direction
 - Teamwork & collaboration
 - Critical Thinking & Problem Solving
 - Diversity & Inclusion
 - Creativity & Innovation
 - Science, Technology, Engineering, Art & Math (STEAM)
 - Print Motivation
-

TOP SECRET

A circular logo with a lightbulb in the center. The lightbulb is drawn with a grey outline and has a yellow glow. It is surrounded by five grey stars: two on the left and right sides, and two at the bottom. The entire logo is set against a light green background with a light blue border.

SPY CLUB

Summer Curriculum Overview

WEEK ONE	Applications & Philadelphia
Day 1	Agent Applications & Agent Test
Day 2	Philadelphia - Mission #001 - Fingerprint Match-Up
Day 3	Philadelphia - Mission#002 - Fingerprint Pull
Day 4	Philadelphia - Mission#003 - Composite Sketch
Day 5	Philadelphia - Mission#004 - Hair Analysis
WEEK TWO	South America & Antarctica
Day 1	Maya - Mission#005 - Quipu
Day 2	Chile - Mission#006 - Coin Identification
Day 3	Antarctica - Mission#007 - Ice Melt
Day 4	Antarctica - Mission#008 - Intercepted letter (PigPen)
Day 5	Antarctica - Mission#009 - LED Lights
WEEK THREE	Crab Nebula & Indian Ocean
Day 1	Crab Nebula - Mission#010 - Nebula Match-up
Day 2	Crab Nebula - Mission#011 - Flight Simulator
Day 3	Indian Ocean - Mission#012 - Nautical Flag Code
Day 4	Indian Ocean - Mission#013 - Boat Engineering
Day 5	Indian Ocean - Mission#014 - The Moon & Currents
WEEK FOUR	Madagascar & Uganda
Day 1	Madagascar - Mission#015 - Cockroach Cover-Up
Day 2	Madagascar - Mission#016 - Paper Weaving
Day 3	Uganda - Mission#017 - Plant Identification
Day 4	Uganda - Mission#018 - Puzzle Piecing
Day 5	Uganda - Mission#019 - Invisible Ink

WEEK FIVE	Egypt & Scandinavia
Day 1	Egypt - Mission#020 - Hieroglyphics
Day 2	Egypt - Mission#021 - Sound Bite
Day 3	Scandinavia - Mission#022 - Svalbard Global Seed Vault
Day 4	Scandinavia - Mission#023 - SOMA Cube Map
Day 5	Scandinavia - Mission#024 - LEGO
WEEK SIX	India & China
Day 1	India - Mission#025 - Bug Identification
Day 2	India - Mission#026 - Follow the Elephants
Day 3	China - Mission#027 - Tangram Puzzle
Day 4	China - Mission#028 - pH Test
Day 5	China - Mission#029 - Chinese Zodiac
WEEK SEVEN	Japan & Australia
Day 1	Japan - Mission#030 - Translation & Origami
Day 2	Japan - Mission#031 - Binary Code
Day 3	Australia - Mission#032 - Secret Message (spy glasses)
Day 4	Australia - Mission#033 - Circular Decoder
Day 5	Australia - Mission#034 - Flight Tracker
WEEK EIGHT	Chicago & Philadelphia
Day 1	Chicago - Mission#035 - Handwriting Match-Up
Day 2	Chicago - Mission#036 - Surveillance Footage
Day 3	Philadelphia - Mission#037 - Independence Hall
Day 4	Philadelphia - Mission#038 - Circuits
Day 5	Philadelphia - Opening of the Cryptex & Party!

WEEK ONE

Training: Laser Maze

Each day this week the FLPEA meetings will open with a laser maze training exercise for the agents. The difficulty level of the maze on day one will be EASY and progressively work it's way up to HARD by five.

Supplies Needed:

- red yarn
- 10 chairs

Set-Up:

Set out the chairs in two rows, back to back, with a three foot gap in between the rows. Start at one end of the chairs, and tie the end of the yarn to one of the legs. Weave the yarn back and forth between the chairs, leaving gaps large enough for children to crawl through. As this activity gets more difficult, you will leave smaller and smaller spaces. Once you've reached the end of the chairs then cut the yarn and tie it off on another leg.

Day 1	Agent Applications, Certificate of Membership, ID Badges & Pins
Day 2	Training: Laser Maze VIDEO MESSAGE: HEADQUARTERS Mission#001: Fingerprint Match-Up (pg. 8-9)
Day 3	Training: Laser Maze Mission#002: Fingerprint Pull (pg. 10)
Day 4	Training: Laser Maze VIDEO MESSAGE: EYEWITNESS ACCOUNT Mission#003: Composite Sketch (pg. 11-12)
Day 5	Training: Laser Maze Mission#004: Hair Analysis (pg. 13) Suspect List (pg.14)

Name: _____

Birth Date: _____

Grade: _____

School: _____

Assigned Agent #: _____

Chosen Alias: _____

Fingerprints		
INDEX	MIDDLE	RING
	Dominant Hand	
THUMB	R L	PINKY

Skills: _____

Why do you want to be an agent?: _____

By filling out and signing this application I, _____
print name

promise to uphold the Free Library of Philadelphia Espionage Agency's excellent standard of work, secrecy and success. I will be

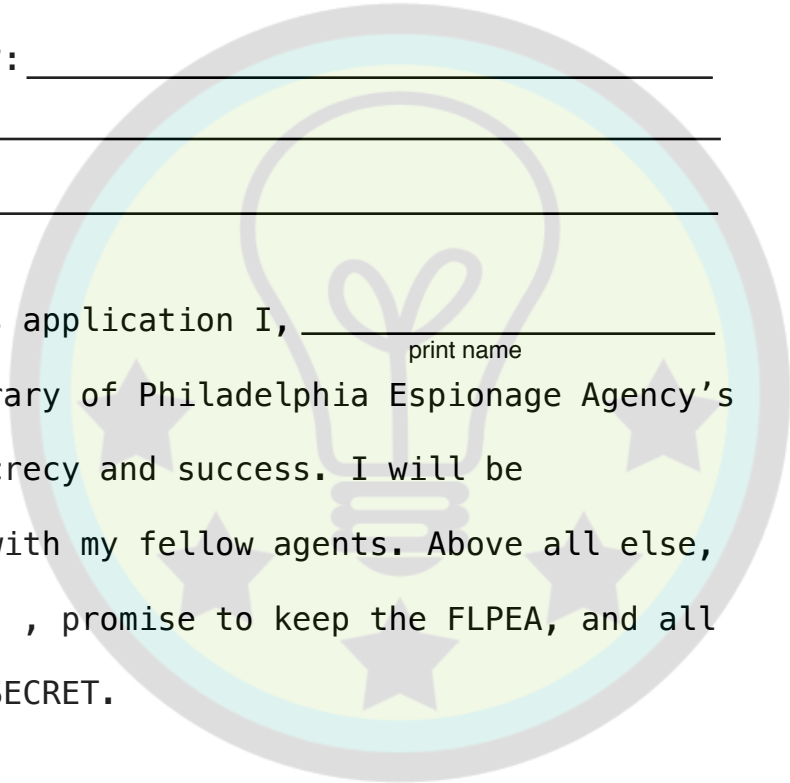
respectful, and work together with my fellow agents. Above all else,

I, _____, promise to keep the FLPEA, and all
print name

the missions I'm sent on, TOP SECRET.

Date: _____ Signature: _____

Special Agent Signature: _____



CERTIFICATE OF MEMBERSHIP

This Certifies that

*Has successfully completed the training
program requirement for the*

**FREE LIBRARY OF PHILADELPHIA
ESPIONAGE AGENCY**

DATE


SPECIAL AGENT ROSE

For the Record

Agent: _____

Mission#: _____

Summary:

Difficulty level of today's mission: 

Please list any information or questions you may have for the FLPEA

Headquarters:

Signature: _____

Mission#001

Materials Provided by Headquarters:

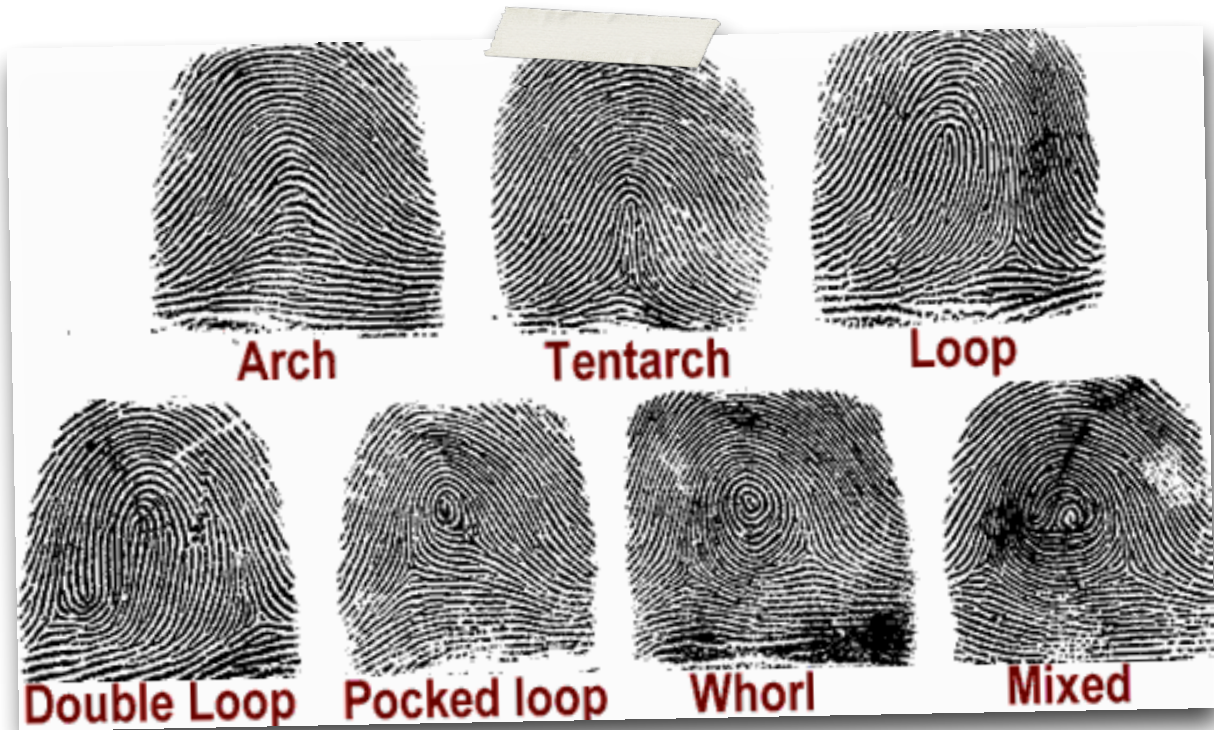
- Fingerprints

Action: Fingerprint Match-Up

Mission: Use the fingerprints pulled from the crime scene along with our digital magnifier to determine how many people were on the job, as well as what fingerprint pattern they have.

Just like a snowflake, no two people's fingerprints are alike. Even identical twins have different fingerprints. Fingerprints are one way of identifying people, along with height, hair, eye color, skin, etc. Though a person's hair, height or eye color may change as they age, a person's fingerprints remain the same.

According to our counterparts at the FBI (Federal Bureau of Investigation), there are seven different fingerprint patterns: see next page.



Prints pulled from crime scene:



Print 001

Pattern Type: _____



Print 002

Pattern Type: _____



Print 003

Pattern Type: _____



Print 004

Pattern Type: _____

Based on the above findings I, Agent _____ print name

believe _____ people were involved in the theft.

Mission#002

Materials Provided by Headquarters:

- Fingerprints

Action: Fingerprint Pull

Mission: We at Headquarters have come across some fresh fingerprints for you to analyze. Using the materials given to you, along with what you've learned about fingerprints, pull the prints off of the glasses. Use the digital microscope to determine what print patterns they are, as well as cross-examining them with yesterday's prints to see if we've got duplicates.

Prints pulled from crime scene:

Print 001

Pattern Type: _____

Print 002

Pattern Type: _____

Print 003

Pattern Type: _____

Signature: _____

Mission#003

Materials Provided by Headquarters:

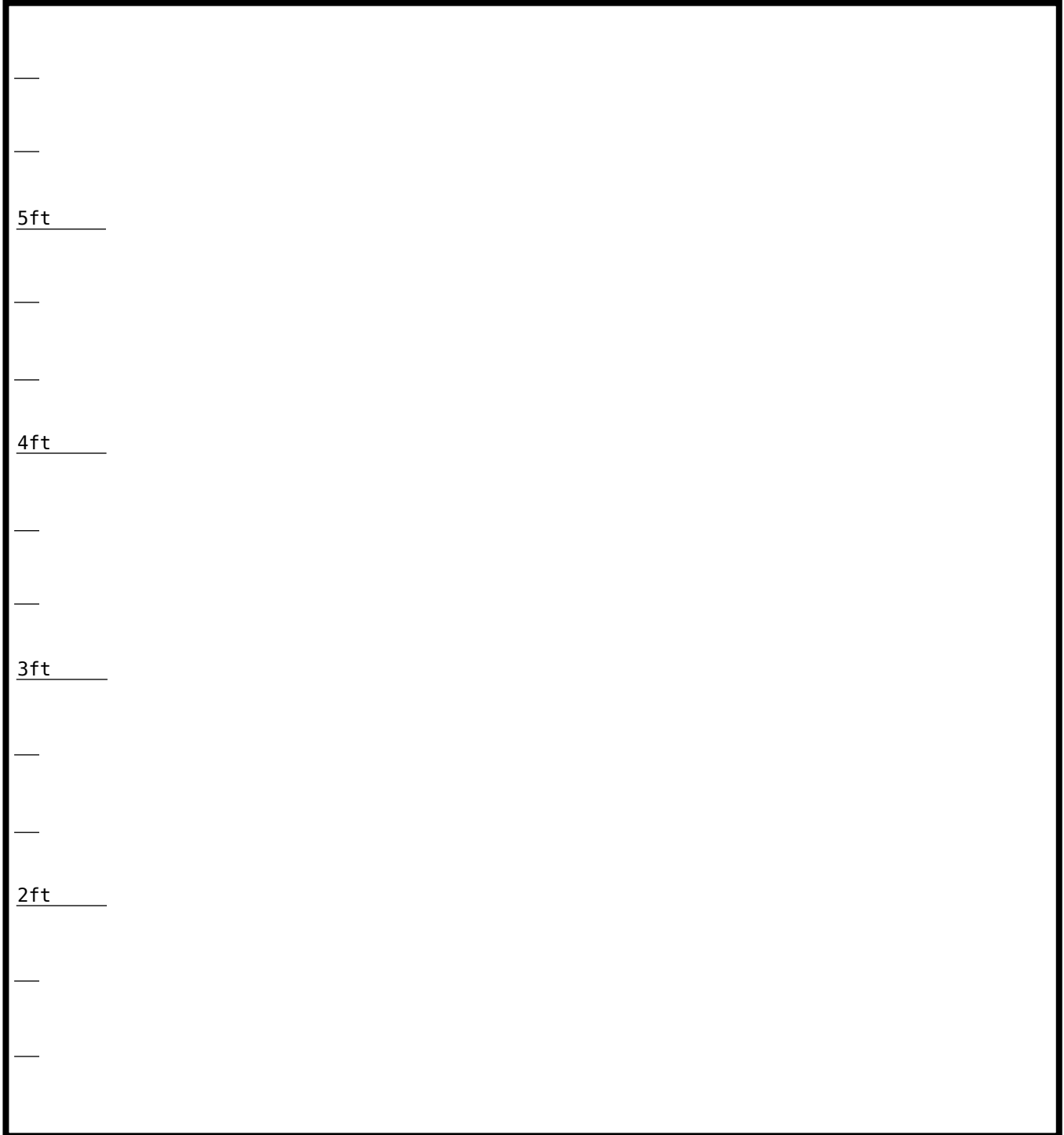
- Eyewitness Account (video)

Action: Composite Sketch

Mission: A composite sketch, or police sketch, is a very successful tool used to apprehend, or catch, criminals when no photo or video surveillance is available. Based on an eyewitness' description, a sketch artist creates a drawing of the suspect. Sketch artists have to be very attuned to detail, for sometimes it's the smallest aspect that makes the biggest difference.

Senior Agent Smith was fortunate enough to catch a glimpse of our suspect as they fled the crime scene. Watch the eyewitness account video. Pay close attention, and then create your own composite sketch of the described person. If we can get a face to match-up with one of our employees, then this could be a big break in the case!

WANTED



Signature: _____

Mission#004

Materials Provided by Headquarters:

- Hair Samples

Action: Hair Analysis

Mission: In addition to fingerprints, another excellent way to identify a person in a crime is from a hair sample. DNA (Deoxyribonucleic Acid) can be found in human hair, and used by forensic investigators to identify people.

Using the digital microscope, carefully analyze the hair samples. Take notes on each one, and then see if you can place one with a person on our suspect list.

Hair Samples from crime scene:

Sample 001: _____

Sample 002: _____

Sample 003: _____

Sample 004: _____

Signature: _____

	Day One	Day Two	Day Three
Activity	Agent Application & Test	Mission #001: Fingerprint Match-Up	Mission #002: Fingerprint Pull
Materials	<ul style="list-style-type: none"> • Application Forms • Agent IDs • Certificate of Membership • Agent Pins • Chairs • Red Yarn 	<ul style="list-style-type: none"> • Digital Microscope • Mission #001 Forms • Pencils 	<ul style="list-style-type: none"> • Digital Microscope • Mission #002 Forms • Glass with fingerprints • Fine powder • Brushes • Tape • Pencils
STEM	S - T - E - Laser Maze M -	S - Forensics T - Digital Microscope E - Laser Maze M - Pattern recognition	S - Forensics T - Digital Microscope E - Laser Maze M - Pattern recognition
Literacy	<ul style="list-style-type: none"> • Print Motivation (see bib) • Narrative Skills: application form • Vocabulary: Alias, Dominant, Espionage • Phonological Awareness: application form 	<ul style="list-style-type: none"> • Print Motivation (see bib) • Narrative Skills: mission recap • Vocabulary: Fingerprint types • Phonological Awareness: mission form 	<ul style="list-style-type: none"> • Print Motivation (see bib) • Narrative Skills: mission recap • Vocabulary: Analyze, Cross-Examine, Duplicates • Phonological Awareness: mission form
21st Century Skills	<ul style="list-style-type: none"> • Initiative • Diversity • Creativity 	<ul style="list-style-type: none"> • Initiative • Teamwork & Collaboration • Critical Thinking 	<ul style="list-style-type: none"> • Initiative • Teamwork & Collaboration • Critical Thinking

	Day Four	Day Five
Activity	Mission #003: Composite Sketch	Mission #4: Hair Analysis
Materials	<ul style="list-style-type: none"> • Projector with DVD player • Eyewitness Account DVD • Mission #003 Forms • Clipboards • Pencils 	<ul style="list-style-type: none"> • Digital Microscope • Hair Samples • Suspect List • Pencils
STEM	S - T - Computer Generated Composite Sketches E - Laser Maze M -	S - Forensics T - Digital Microscope E - Laser Maze M - Pattern recognition
Literacy	<ul style="list-style-type: none"> • Print Motivation (see bib) • Narrative Skills: mission recap • Vocabulary: Composite, Eyewitness, Apprehend, Surveillance • Phonological Awareness: mission form 	<ul style="list-style-type: none"> • Print Motivation (see bib) • Narrative Skills: mission recap • Vocabulary: Deoxyribonucleic Acid (DNA), Forensic • Phonological Awareness: mission form
21st Century Skills	<ul style="list-style-type: none"> • Initiative • Creativity • Critical Thinking • Diversity 	<ul style="list-style-type: none"> • Initiative • Teamwork & Collaboration • Critical Thinking • Adaptability

Yearly Academic Themes

Over the course of the curriculum, the following academic concepts will be taught via missions and training exercises:

- Physics
- Geometry
- Simple Math Equations
- Geography
- Map Literacy
- Earth Science
- Biology
- Astronomy
- Chemistry
- Forensics
- Engineering (bridge, boat, and plane construction)
- History
- Codes & Ciphers (Binary, Pigpen, etc.)
- Ethics
- Resource Management
- And much more...

With this spy club curriculum students will be given an unique and exciting way to interact with and absorb information while training their minds to think creatively and practically. Along the way they'll develop skills needed to interact with others and a sense of wonder for the world around them.

"Education is not the learning of facts, but the training of the mind to think."

- Albert Einstein
