USER GUIDE

SCAN TO ACCESS YOUR INSTRUCTOR MATERIALS

MARIJUANA IMPAIRED DRIVING COURSE

INTRODUCTION

Recreational marijuana use has been shown to impair cognitive functioning on several levels — from basic motor coordination to more complex executive function tasks. Studies have shown that drivers under the influence of marijuana experience a decrease in their car handling performance. Yet many people believe they are not adversely affected by marijuana use and can safely drive.

Follow These Steps to Give a Successful and Impactful Demonstration

1. Define the **impairment** caused by recreational marijuana use.
2. Review the **purpose** of the demonstration and your **expected outcome**, see http://bit.do/mardequickstart for video.
3. Know what you are attempting to change in your **audiences' beliefs** about recreational marijuana use and driving.
4. **Practice delivery** of the activity to undermine optimistic biases about impairment.
5. Gather the **necessary materials** for delivering your activities.
6. **Set up** the course.
7. **Deliver** the activity.
8. Apply **tips** for delivering a successful demonstration.

INTRODUCTION

Activity Purpose

This activity demonstrates to participants how recreational marijuana can impair a person's perception, and therefore impact his or her decision-making and reaction times while driving.

Objective

By the end of this session, participants will:

- Experience the simulated loss of perception from recreational marijuana use and the impaired ability to make quick, accurate and confident decisions while driving.
- Understand the potential consequences that impairment can have on their driving skills.

Evidence-Based Approach

The purpose of the Marijuana Driving Experience program using the Fatal Vision® Marijuana Goggles is to give participants an experience of cognitive impairment associated with recreational marijuana use and help them understand the consequences that follow. This impairment includes slower decision-making, loss of short-term memory, distorted processing of visual information, slight alteration of visual perception, disruption of useful field of view, divided attention failure and loss of reaction time. People may believe that using marijuana while driving is safe and without consequences (optimistic bias). By demonstrating that they are susceptible to modeled impairments caused by wearing the Marijuana Goggles, we may undermine this assumption. The severity of crashes caused by driving under the influence of marijuana can also be highlighted as participants discuss the potential consequence from errors made during the simulation.

INTRODUCTION

How the Goggles Model Impairment from Recreational Marijuana Use

The Fatal Vision® Marijuana Goggles model several impairments associated with recreational marijuana use, including diminished visual perception of sensory input, short-term memory loss and slowed reaction time.

To model diminished visual perception, the Fatal Vision® Marijuana Goggles change a person's ability to accurately discern certain colors. Please know that marijuana does not cause an individual to lose their ability to see color. This feature allows the demonstration of diminished visual perception and the potential consequences associated with that impairment.

This feature is also used to model short-term memory loss. By filtering out certain colors that a participant may rely on as visual cues in an activity, a participant increases their reliance on short-term memory to complete an activity. The increased use of a person's short-term memory without the aid of visual cues will make it more difficult to memorize a sequence of steps in the activity. This "loss of short-term memory" in the activity using the Fatal Vision® Marijuana Goggles models the short-term memory loss caused by marijuana impairment. The Marijuana Driving Experience activity will require participants to react appropriately to visual cues, just as any vehicle operator would be required to do at stop lights, pedestrian cross-walks, and other traffic signals.

SET-UP

Materials List

- 1 Fatal Vision® Marijuana Goggles
- Fatal Vision® Roadster Pedal Kart
- 16 cones
- 8 clips, lights
- 1 remote for lights
- 2 scoreboards
- 1 course cards
- 2 helmets
- 2 safety glasses
- 1 measuring wheel
- 1 painter's tape

Set-up (approximately 45 minutes) see http://bit.do/mardesetup for video.

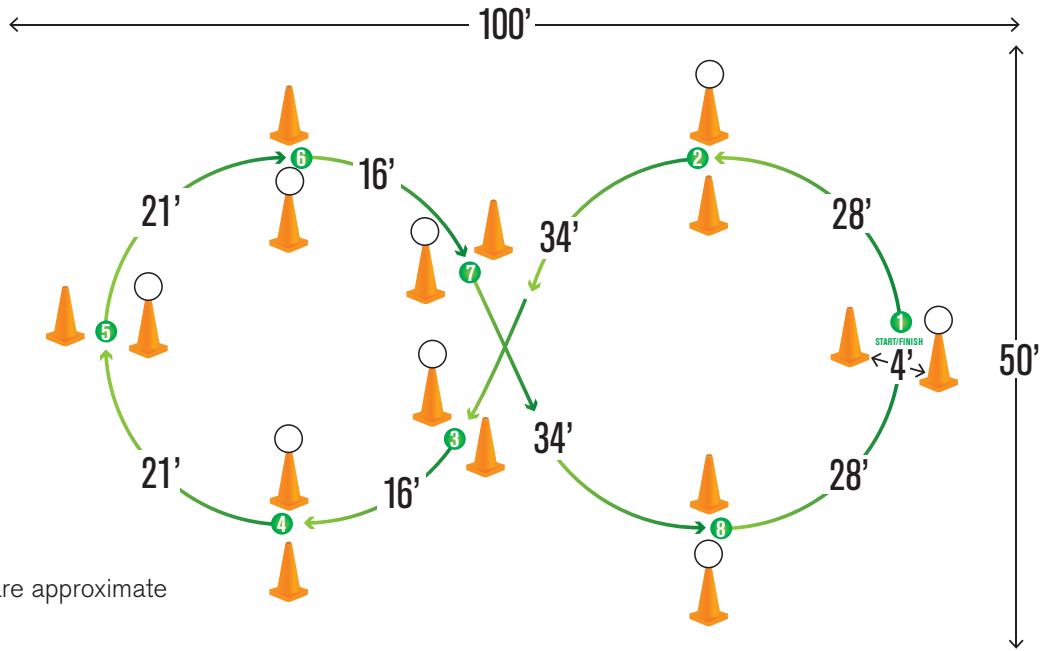
1. Assemble light clips, see http://bit.do/mardelights for video.
2. Create a figure-eight course in an indoor space that is approximately the size of a basketball court, 100' x 50'. The course will be set up with pairs of cones as shown below. (See next page for approximate measurements.)
3. One cone in each pair will have an LED light clamp, for a total of eight lights as shown.
4. Use the LED remote to change the light colors as shown in Layout 1 in the course cards. The chart below describes the required action by color.
5. You will need three monitors to run the presentation. Assign one person to each responsibility.

   Instructor: Responsible for messaging, helping the audience process the experience, answering questions, and relating driving reactions to examples of how recreational marijuana affects divided attention and responses to driving cues.

   Safety: Prepares the next driver for the course. Controls the crowd and points out when the driver reacts inappropriately to driving cues.

   Lights: Responsible for changing lights patterns as needed. If desired, this person can play sound effects such as crash sounds, "Watch out!" or screams when driving cues are missed.

SET-UP



Measurements are approximate

ACTIVITY OVERVIEW

It will take about 10 minutes to introduce the course and activity to the entire group.

Introduction (approximately 10 minutes): Give your audience an overview of the activity.

Items to cover:

1. **Introduction:** Some people believe there is little risk associated with marijuana use and driving, or they compare the impairment due to alcohol with the impairment due to recreational marijuana. However, the impairments are very different in how they affect driving skills.

2. **Experience:** This is a behind-the-wheel driving experience that will give group members an idea of how recreational marijuana affects some driving skills and decisions.

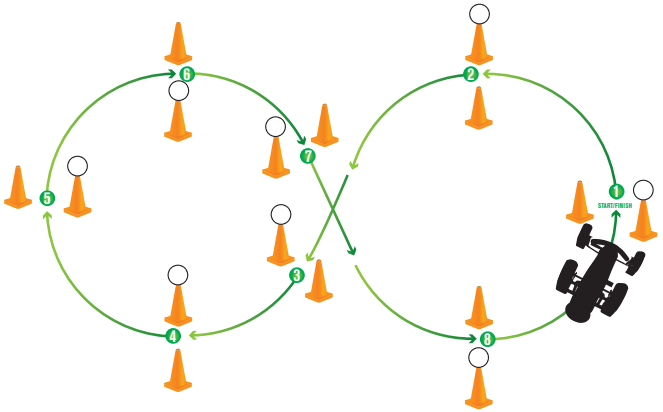
3. **How do you know?:** Ask group members if they have driven behind someone whom they think might be impaired. What clues made them think the driver was impaired?

4. **Modeled impairment:** Research has shown that marijuana can cause "divided attention failure." Ask the group: Has your teacher ever asked you to give your "undivided attention" to an activity? What does that mean? When driving, a driver must be able to quickly "divide his attention" between multiple objects or events occurring in the driving environment to respond quickly and appropriately. Divided attention failure means there are cues in the driving environment the driver might miss because he can't switch his focus and process the information fast enough. This loss of reaction time can result in driving mistakes.

ACTIVITY OVERVIEW

Course overview:

5. **The course:** The course has eight indicator lights that signal cues for the driver to follow. The lead driver, drives the Fatal Vision® Roadster through the course twice — the first time without impairment, and the second time with the Marijuana Goggles. The group will compare the results of the two drives.



6. **Walk the course:** Walk the course with the entire group. Point out each indicator light and the corresponding action.

COURSE OF ACTION

OFF	Go through
RED	Stop
DARK BLUE LIGHT BLUE	Hug right of lighted cone (change lane)
ORANGE	Go left, opposite of lighted cone (hazard)
GREEN	Go through without hesitation
PURPLE	Stop for pedestrian

ACTIVITY OVERVIEW

a. **Lead driver:** The Lead driver should respond accurately to each action indicator light. While wearing the goggles, the driver's ability to respond accurately will be impaired. Afterward, the group will discuss how impairment might impact driving skills and safety.

b. **Chase driver:** The Chase driver reacts to the Lead driver as is typical of traffic — honking when she makes inappropriate stops, hesitates, or turns the wrong way.

c. **Driving feedback:** The Lead driver will receive feedback from:

The audience: Encourage the spectators to react. When the driver responds incorrectly to an indicator light, the audience should shout "Watch out!" or use sound effects. Likewise, they can react positively when the driver correctly reacts to the situation.

Chase driver: The Chase driver follows the Lead driver to represent typical traffic. If the Lead driver stops at a green light or where there is no light, the Chase driver should respond as normal traffic would — by honking the horn.

Observer: Ask a volunteer from the audience to watch the driver and mark on the scoreboard each cue missed on the second drive. Review the sheet with the driver and point out the cues missed.

ACTIVITY STEPS

1. Ask for two volunteers. Have them put on helmets and select one as the Lead driver and one as the Chase driver.

2. Instruct the drivers to travel the course with the Fatal Vision® Roadster. The Lead driver is in front.

3. After driving the course once without impairment, the Lead driver puts on the Fatal Vision® Marijuana Goggles. At the same time, the Lights Monitor changes the lights to another layout pattern. The Lead driver should not see the lights being changed.

4. The drivers travel the course a second time.

5. Process the experience with the drivers and audience.

6. Repeat the activity with the next set of drivers. An easy transition is to have the Chase driver become the Lead driver.

7. After each driver completes the course, have the Observer show the Lead the driving errors she saw. Ask the driver if he realized he missed the cues.

DISCUSSION QUESTIONS

- How important are clear thinking and perception to maintaining the ability to react to traffic situations?
- Can you think of traffic situations where you have needed to, or would need to, assess and respond immediately?
- What impact would a delay in processing and reaction time have in that situation?

DEMONSTRATION TIPS

Vary the course:
Have each driver start at different points in the course rather than the same point every single time.

Change the lights:
The lights will change with each drive because traffic situations are always changing. No two drives are the same, and drivers must be prepared to both obey traffic laws and react to unexpected traffic changes and events.

Sample questions to use with the Lead driver to process his experience:

- "What was your experience like?"
- "How did it feel when you did not respond appropriately to the driving cues?"
- "How confident were you with your driving decisions when you were driving impaired, compared to your first drive?"

Help participants focus on what they're missing:
It's important to explain to participants that the goggles are only modeling impairments associated with recreational marijuana use by altering the wearer's color perception. A person under the influence of recreational marijuana is still able to discern color, but will experience impairments associated with marijuana use including slower reaction time, diminished ability to shift attention between events, and diminished Useful Field of View. These impairments have an impact on a driver's ability to operate a vehicle. Ask the group to identify some of the impacts they observed.

DEMONSTRATION TIPS

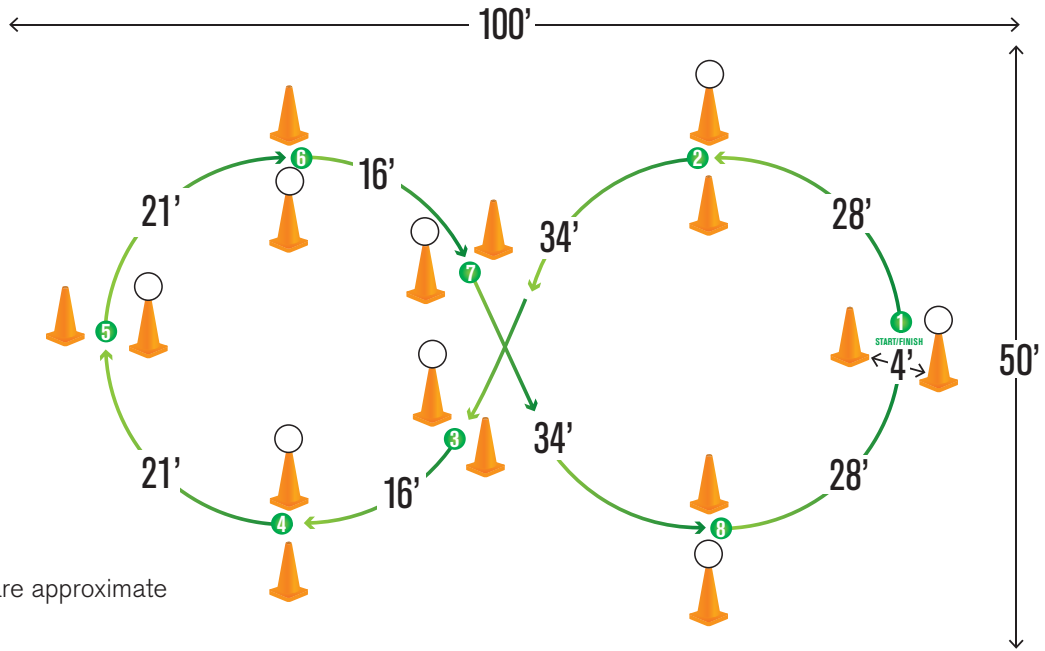
List common reactions to cognitive overload:

Some common reactions to the cognitive overload/stress due to reduced processing capacity are:

- Driving slower
- Hesitation
- Frustration
- Confusion
- Lack of confidence and nervousness
- Giving up
- Forgetting driving instructions or cues that the driver previously responded to without hesitation.

How many of these reactions did spectators observe?

LIGHT PATTERN – LAYOUT



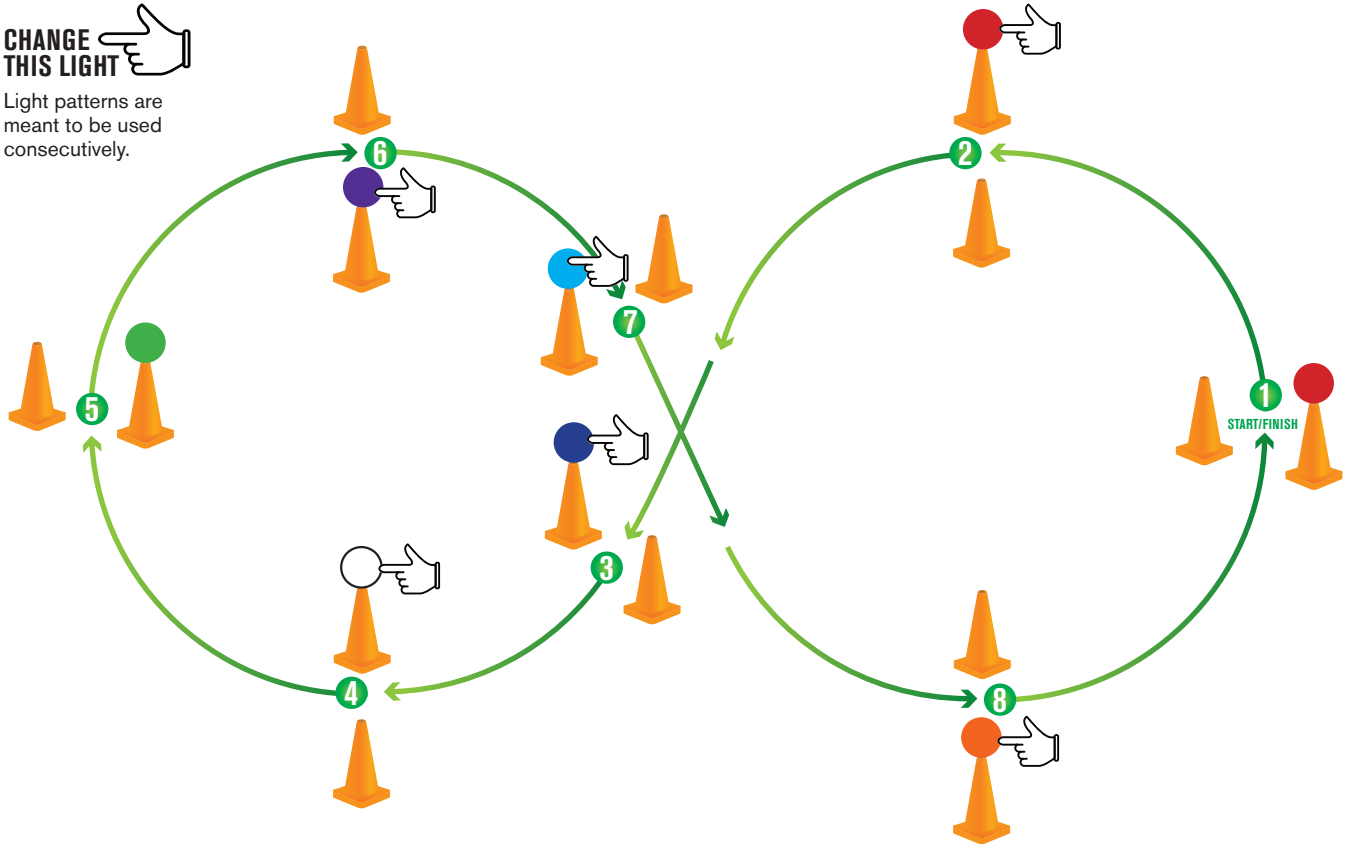
Measurements are approximate

LIGHT PATTERN – LAYOUT 1

CONE:	LIGHT COLOR IN LAYOUT 5:	CHANGE LIGHT IN LAYOUT 1 TO:
1	RED	NO CHANGE
2	OFF	RED
3	PURPLE	DARK BLUE
4	RED	OFF
5	GREEN	NO CHANGE
6	GREEN	PURPLE
7	ORANGE	LIGHT BLUE
8	LIGHT BLUE	ORANGE

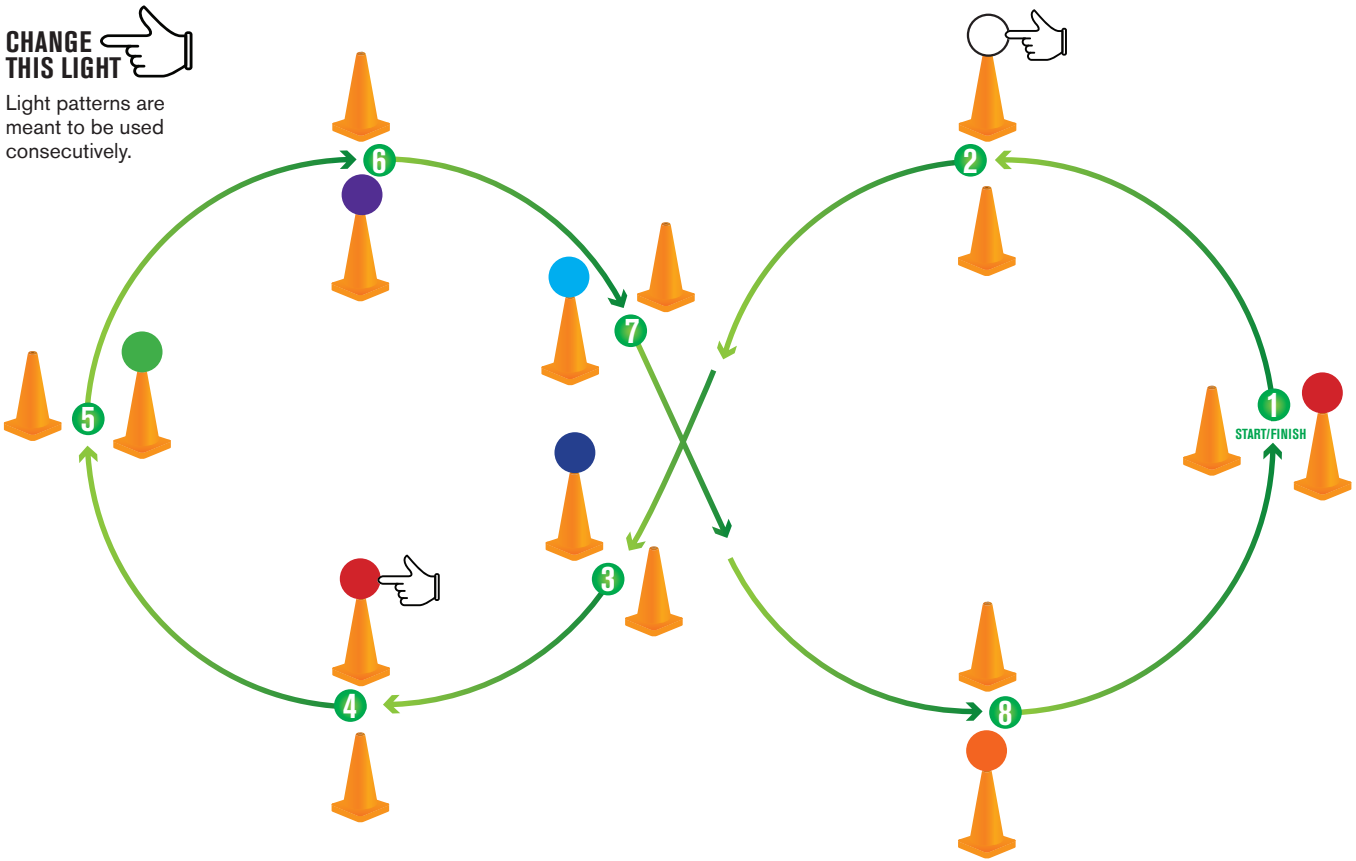
CHANGE THIS LIGHT

Light patterns are meant to be used consecutively.



LIGHT PATTERN – LAYOUT 2

CONE:	LIGHT COLOR IN LAYOUT 1:	CHANGE LIGHT IN LAYOUT 2 TO:
1	RED	NO CHANGE
2	RED	OFF
3	DARK BLUE	NO CHANGE
4	OFF	RED
5	GREEN	NO CHANGE
6	PURPLE	NO CHANGE
7	LIGHT BLUE	NO CHANGE
8	ORANGE	NO CHANGE

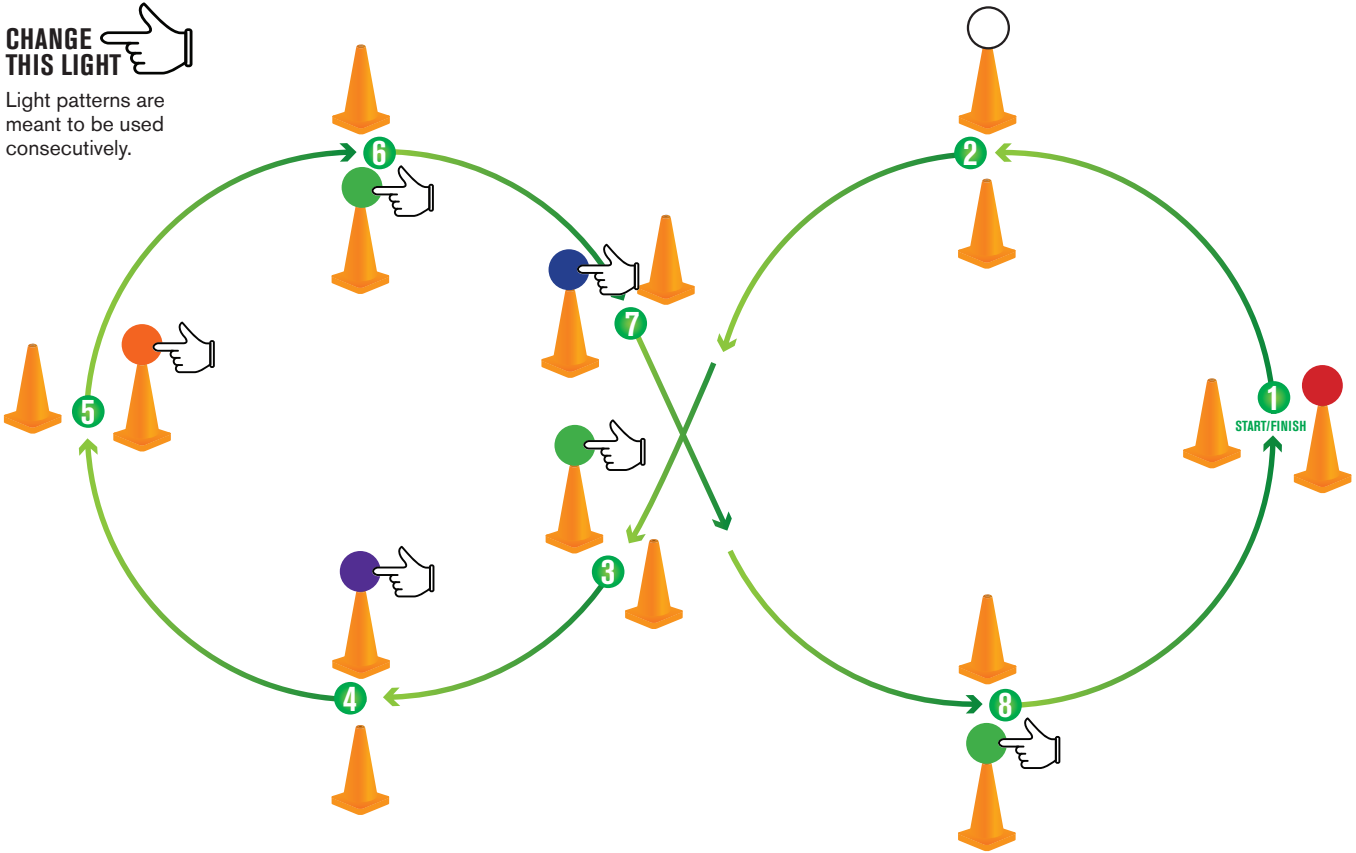


LIGHT PATTERN – LAYOUT 3

CONE:	LIGHT COLOR IN LAYOUT 2:	CHANGE LIGHT IN LAYOUT 3 TO:
1	RED	NO CHANGE
2	OFF	NO CHANGE
3	DARK BLUE	GREEN
4	RED	PURPLE
5	GREEN	ORANGE
6	PURPLE	GREEN
7	LIGHT BLUE	DARK BLUE
8	ORANGE	GREEN

CHANGE THIS LIGHT

Light patterns are meant to be used consecutively.

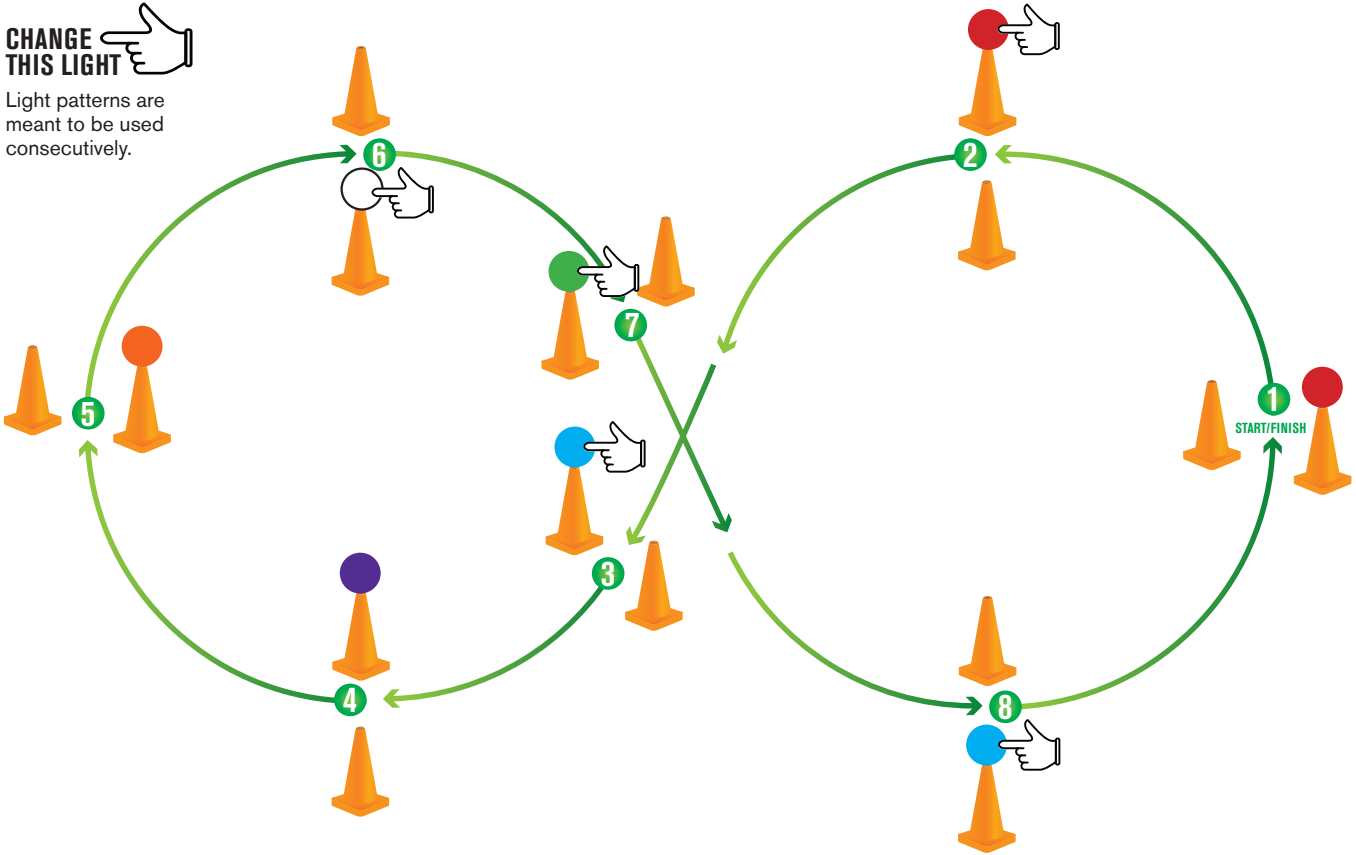


LIGHT PATTERN – LAYOUT 4

CONE:	LIGHT COLOR IN LAYOUT 3:	CHANGE LIGHT IN LAYOUT 4 TO:
1	RED	NO CHANGE
2	OFF	RED
3	GREEN	LIGHT BLUE
4	PURPLE	NO CHANGE
5	ORANGE	NO CHANGE
6	GREEN	OFF
7	DARK BLUE	GREEN
8	GREEN	LIGHT BLUE

CHANGE THIS LIGHT

Light patterns are meant to be used consecutively.

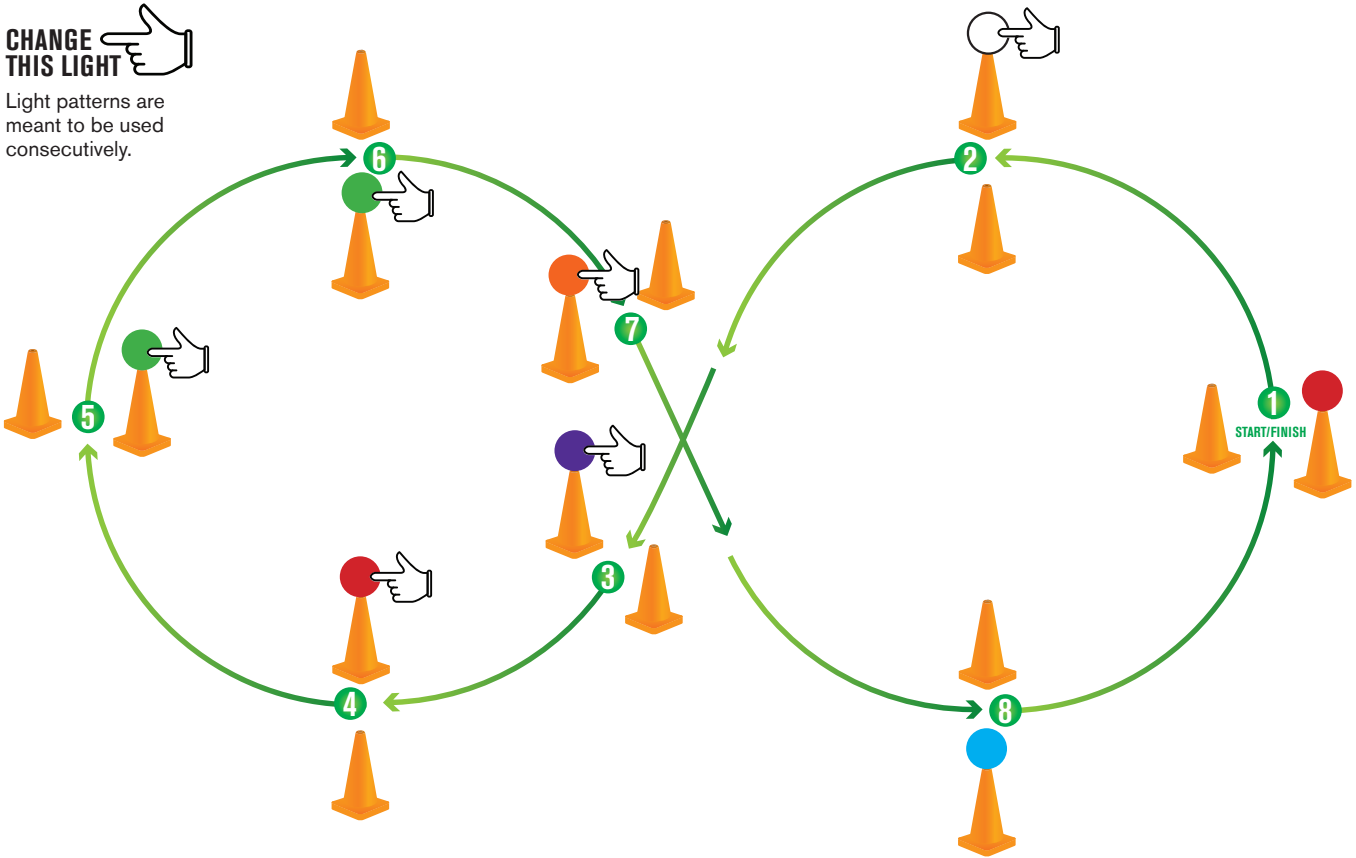


LIGHT PATTERN – LAYOUT 5

CONE:	LIGHT COLOR IN LAYOUT 4:	CHANGE LIGHT IN LAYOUT 5 TO:
1	RED	NO CHANGE
2	RED	OFF
3	LIGHT BLUE	PURPLE
4	PURPLE	RED
5	ORANGE	GREEN
6	OFF	GREEN
7	GREEN	ORANGE
8	LIGHT BLUE	NO CHANGE

CHANGE THIS LIGHT

Light patterns are meant to be used consecutively.



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