INSTRUCTIONS

[click through this document
using the arrow keys]

Dear participant,

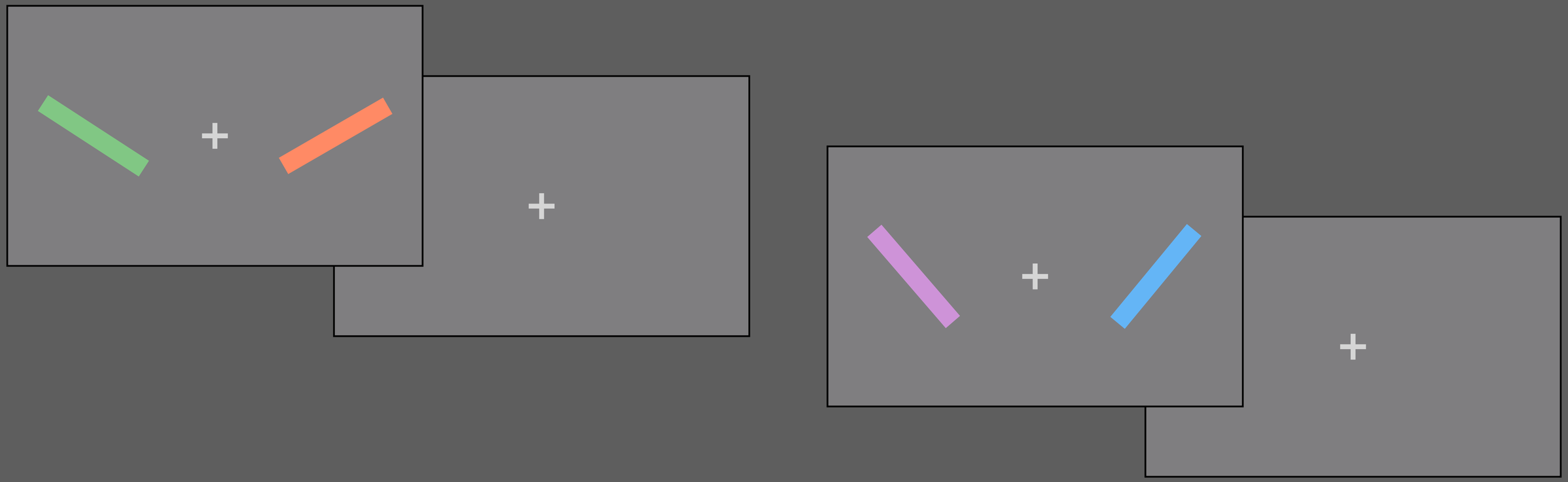
Thank you for agreeing to participate in this experiment. This document will give you instructions about the task you will perform. If you like, we can go through them together.

In this experiment we will test your visual working memory: the ability to memorise visual information for a short amount of time. You will be asked to memorise the orientation of coloured bars presented on the screen for a short amount of time. After keeping them in mind, you will be asked to reproduce the orientations using a response dial.

These instructions will give you a rough idea of what to expect later. You will also practice the task afterwards.

Good luck!

During the task, coloured oriented bars will be presented on a computer screen. Four of these will appear sequentially (one after the other), in pairs of two, with blank screens in between



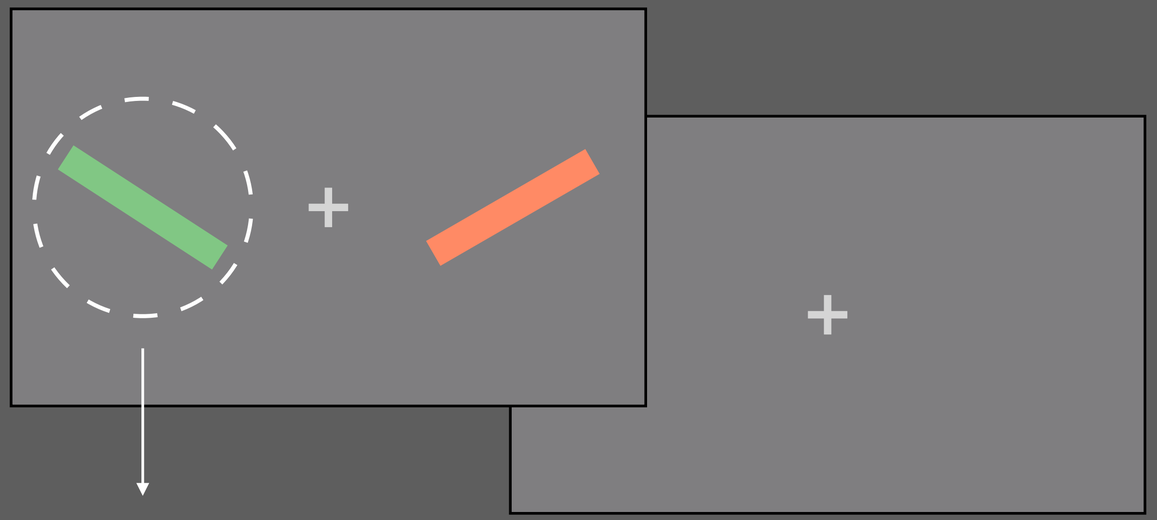
Although four different bars are always presented on the screen, only two are relevant for you to memorise & reproduce

Preceding a block you will receive a pre-cue, telling you:
- the relevant colours
- the order in which you need to report them

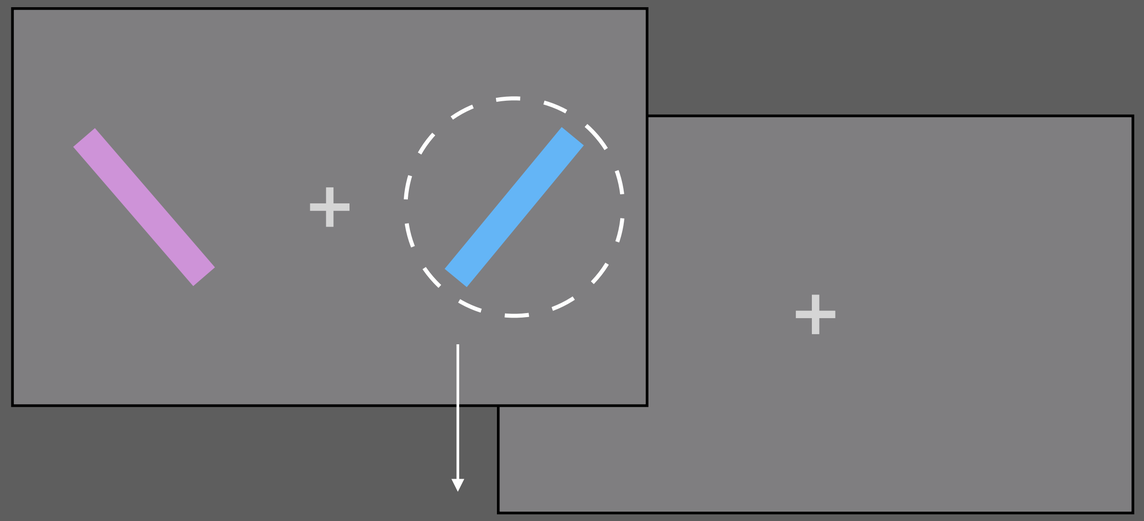
In this example, the relevant colours are GREEN and BLUE
The order in which you'll need them is: *green first*, *blue second*

So, in this example:

GREEN then BLUE



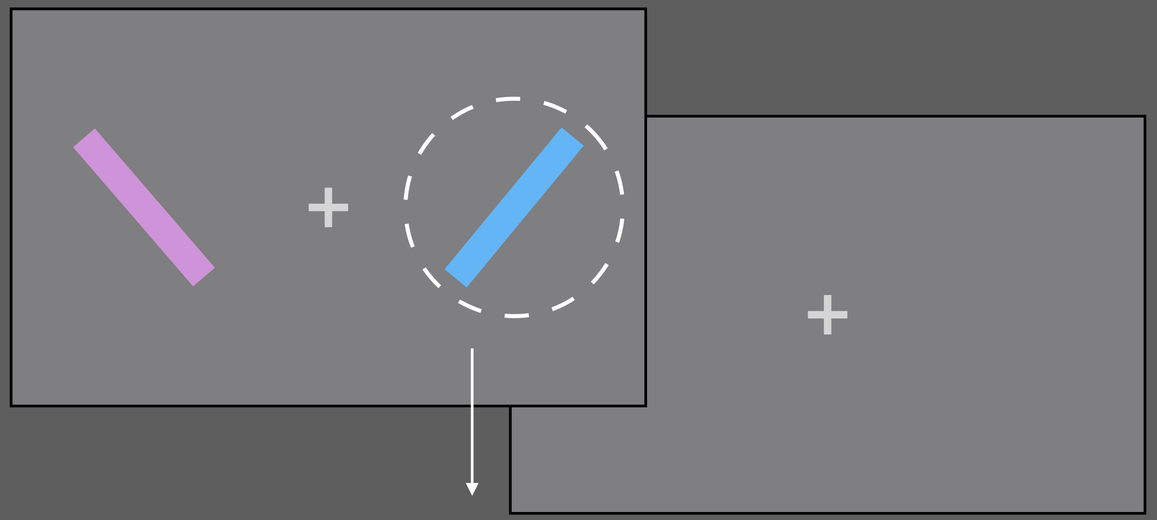
You will need the green bar first



and the blue bar second

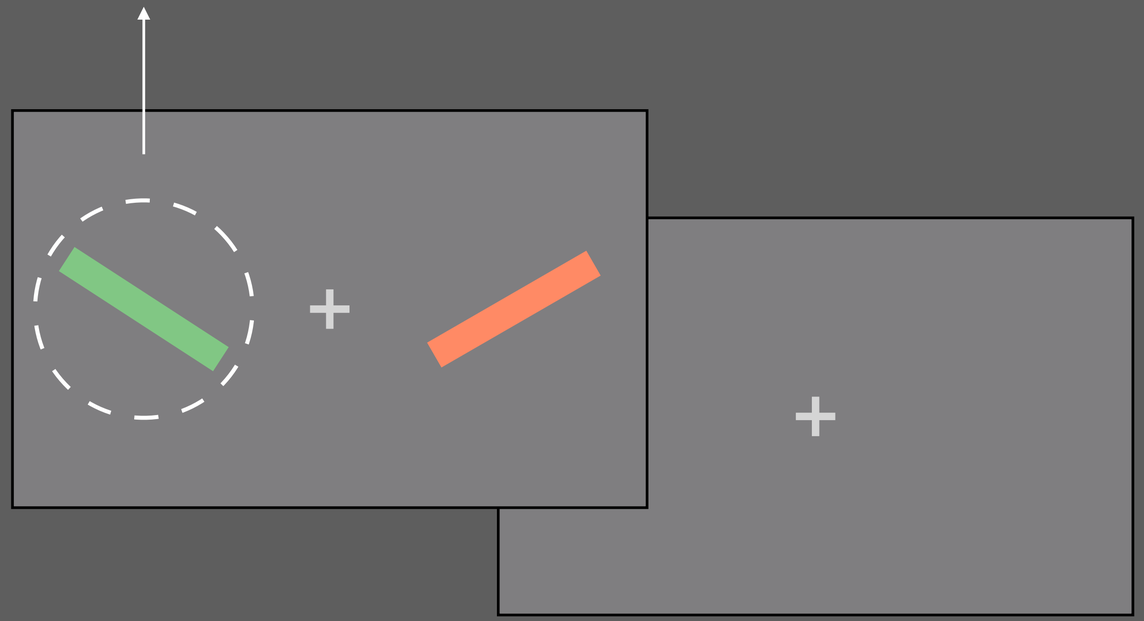
Even when you SEE the blue bar first:

GREEN then BLUE

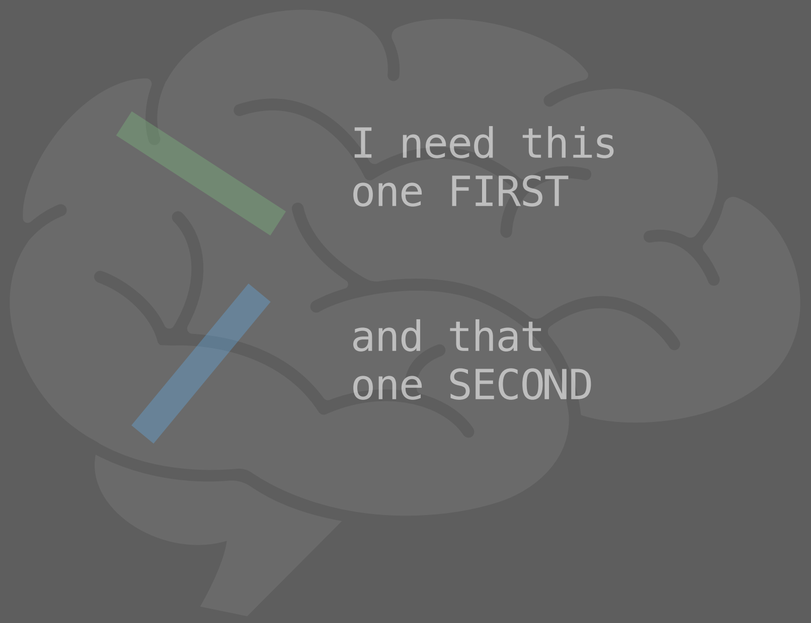


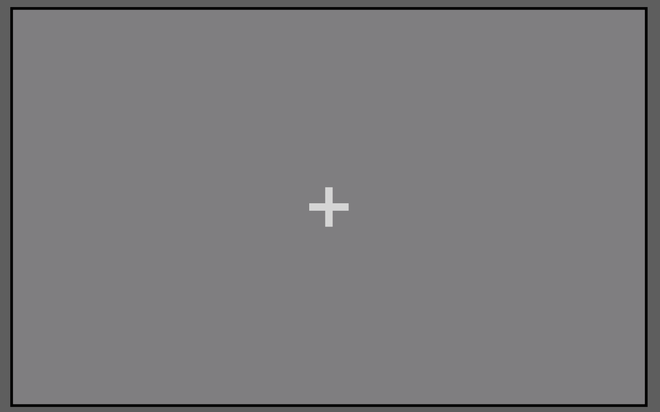
and the blue bar second

You will NEED the green bar first

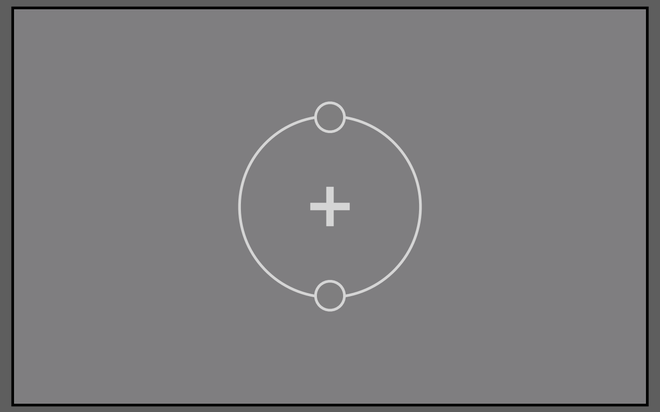


After you’ve seen the bars, you’ll keep them in your memory for a short period of time, while looking at the fixation cross



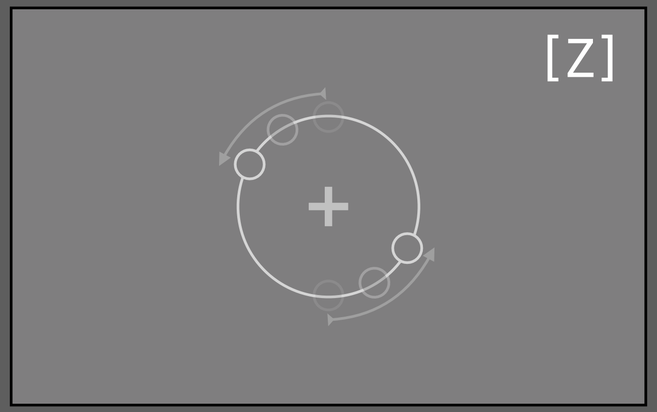


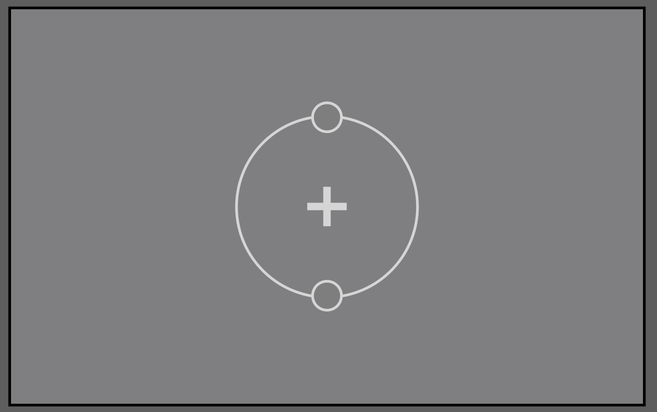
You can reproduce the orientation by turning the handles of the RESPONSE DIAL (kind of like a steering wheel)



The handles represent an orientation
The starting point is always fully vertical.

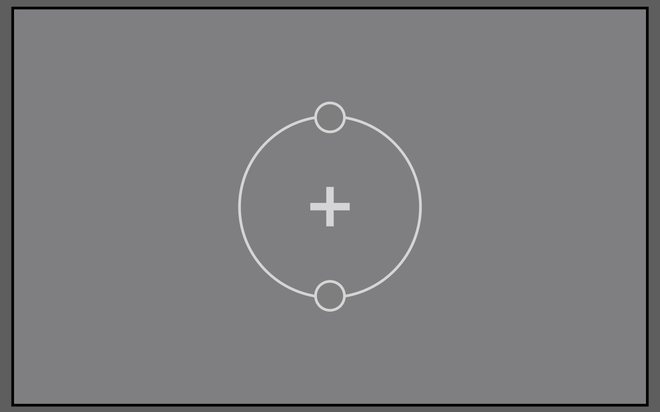
You can reproduce the orientation by turning the handles of the RESPONSE DIAL (kind of like a steering wheel)

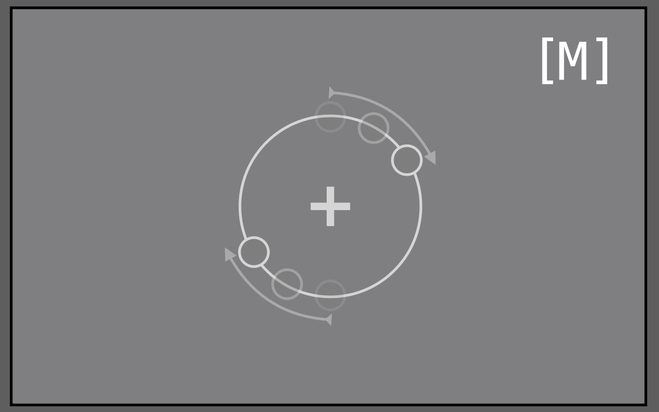




press and hold [Z] with you left index finger
to turn the dial *counterclockwise*

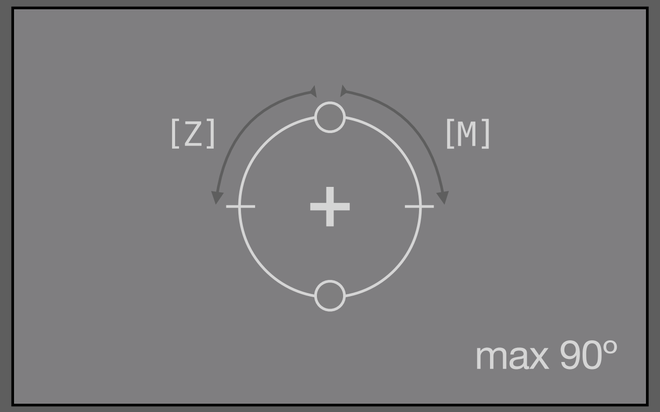
You can reproduce the orientation by turning the handles of
the RESPONSE DIAL (kind of like a steering wheel)



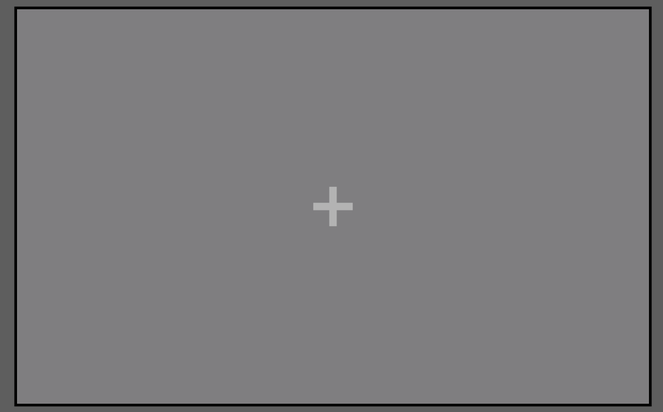


press and hold [M] with you right index finger
to turn the dial *clockwise*

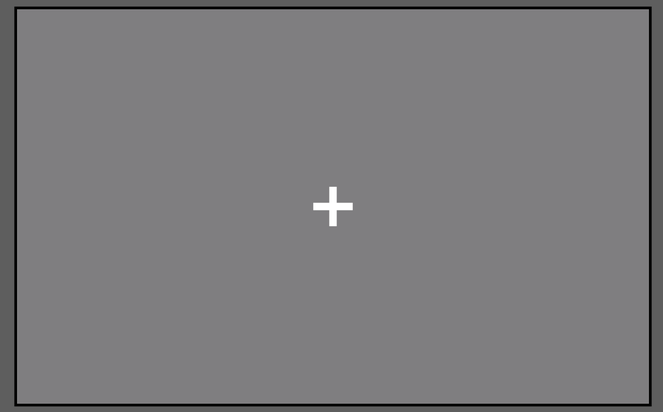
Note: you can only turn the dial 90 degrees in each direction



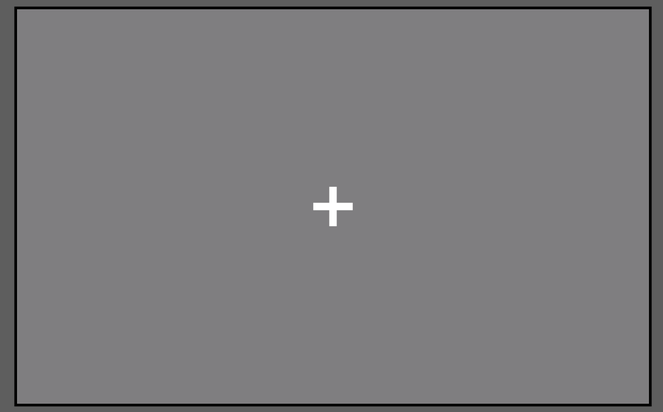
Back to our bars: we remembered the orientations of the GREEN and BLUE bar, and know we need to reproduce the GREEN bar first:



Using the response dial to reproduce the orientations

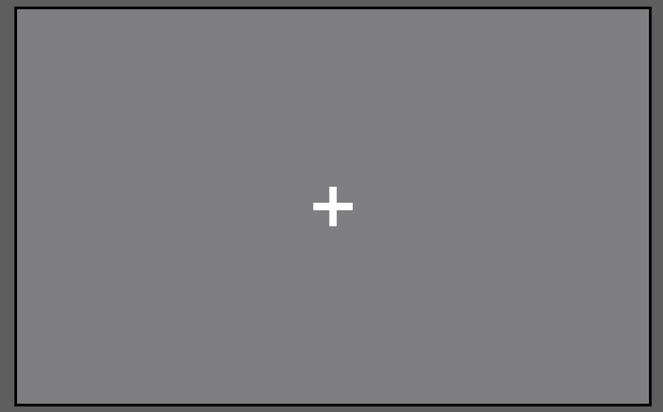


Using the response dial to reproduce the orientations



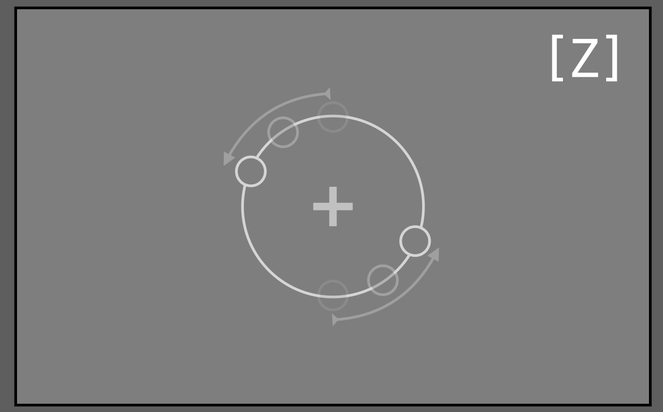
Did you see that? The fixation cross increased in brightness, meaning that you can start reproducing the orientation of the first bar

Using the response dial to reproduce the orientations



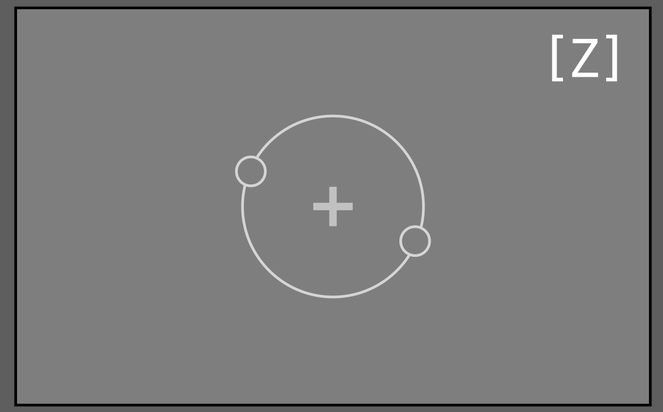
You needed the green bar first. Because it is tilted to the left, you need to press [Z] with your left hand to reproduce it.

Using the response dial to reproduce the orientations



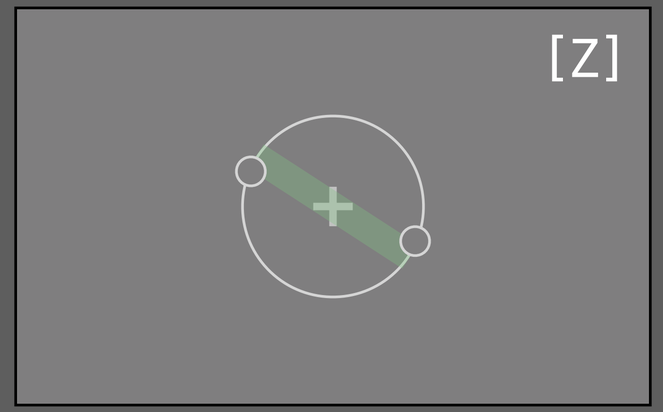
As soon as you press a button, the response dial appears, and the handels start spinning around the dial.

Using the response dial to reproduce the orientations



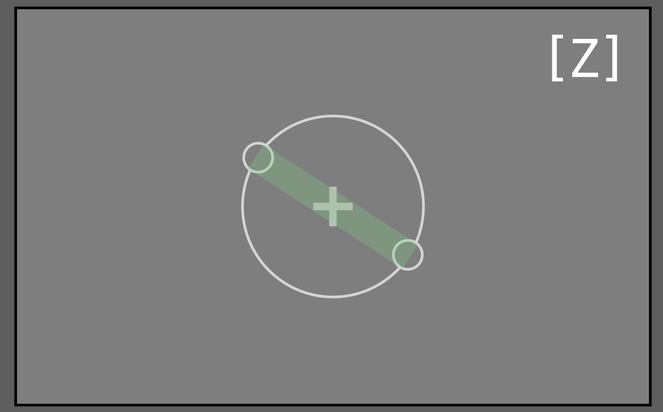
When you release the button, the handles stop spinning, and your response is made.

Using the response dial to reproduce the orientations



If you match the orientation of the handles to the one of the GREEN BAR you'll see they are quite similar (but not 100% identical)

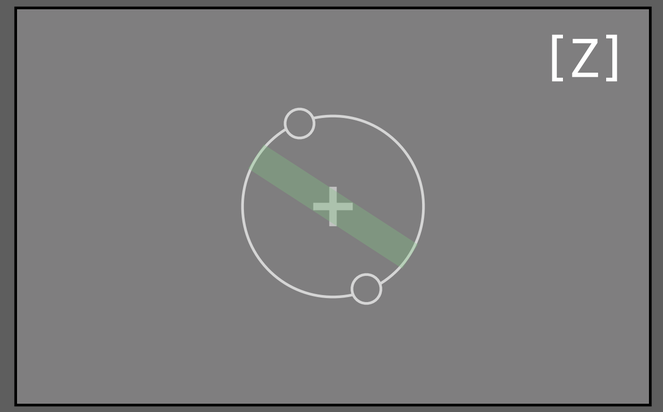
Using the response dial to reproduce the orientations



The closer to the real orientation, the better.

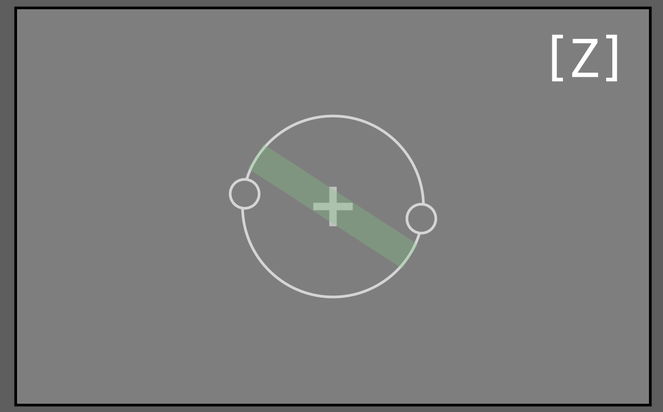
In this case, you pressed the button slightly too long. Had you pressed it shorter, it would have been identical.

Using the response dial to reproduce the orientations



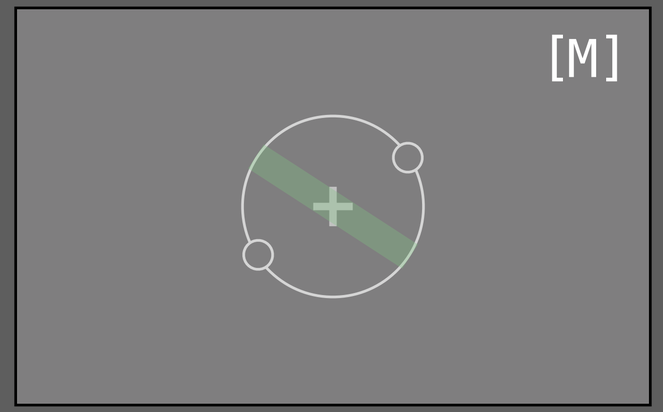
Had you pressed it too short, you would have missed the target

Using the response dial to reproduce the orientations



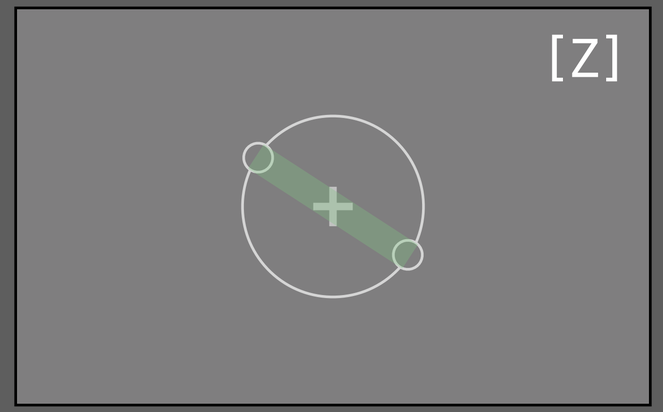
Had you pressed it too long, you would have also missed the target

Using the response dial to reproduce the orientations



Had you pressed the wrong button [M], you would have been even more off

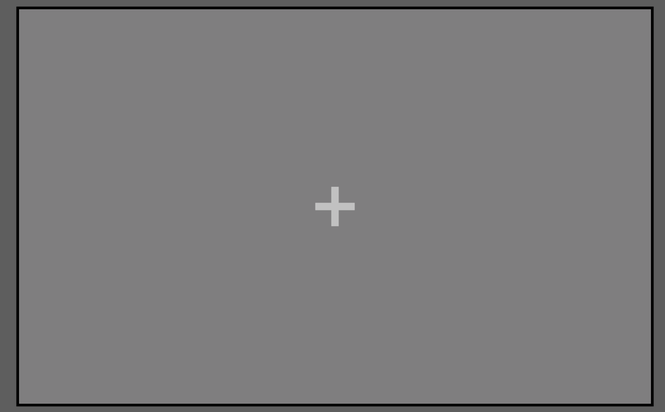
Using the response dial to reproduce the orientations



In other words: you need to press the correct button, but also time the duration of you button press to get it right!

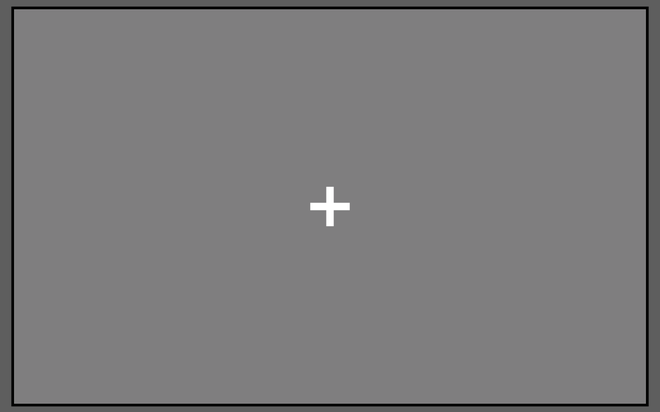
Accuracy is important: try to match the exact orientation by timing the duration of your button press

Using the response dial to reproduce the orientations



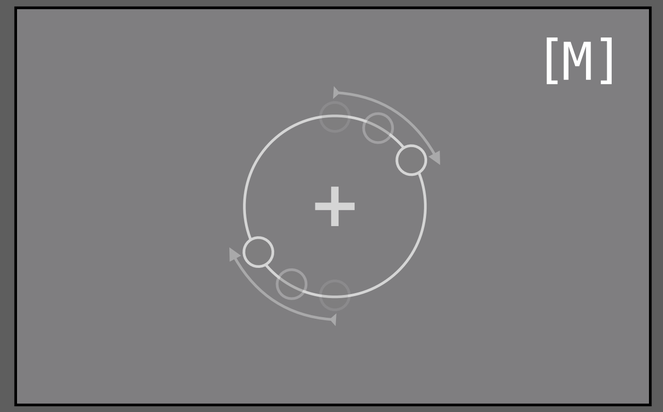
After reproducing the first bar, the dial disappears

Using the response dial to reproduce the orientations



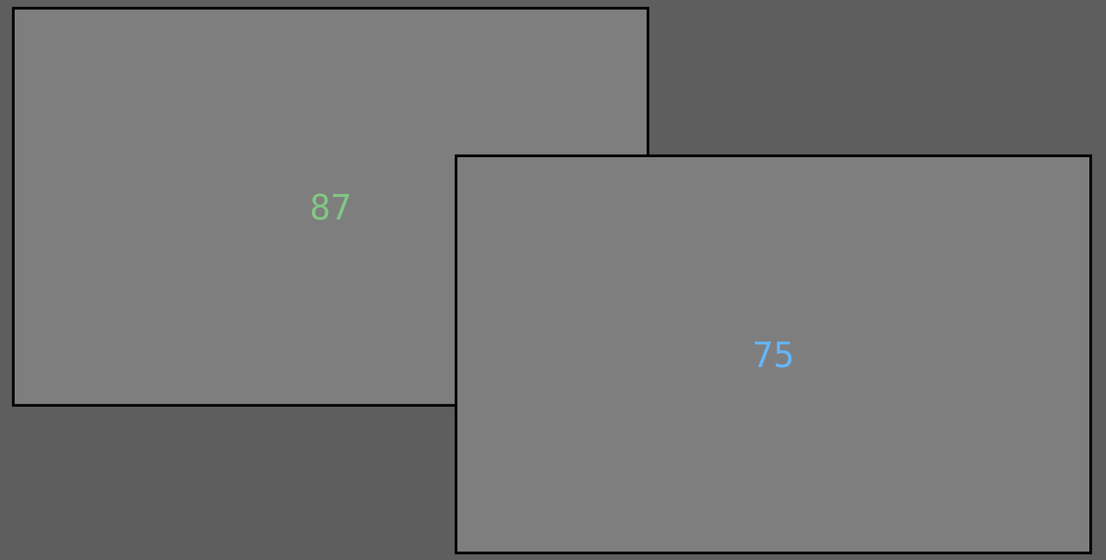
As soon as the fixation cross increases in brightness again, you can start reproducing the orientation of the second bar.

Using the response dial to reproduce the orientations



It was tilted to the right, so you need to press [M] with your right hand to reproduce it.

Feedback on your performance



The dial disappears again, and you'll receive feedback separately for each reproduced bar (color indicates which bar it refers to).

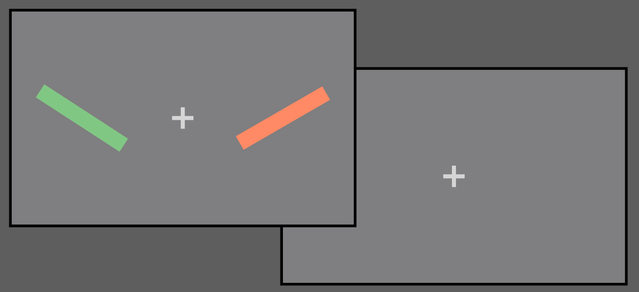
The feedback is a number between 0–100%: higher numbers indicate higher accuracy at reproducing the orientation

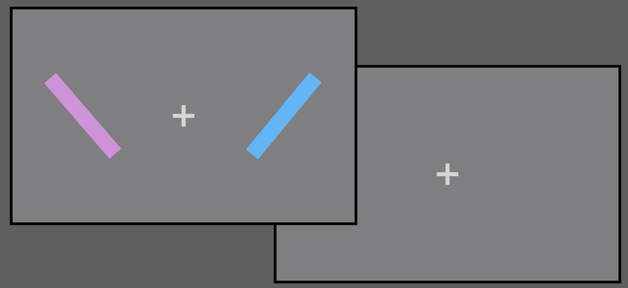
SUMMARY

GOAL: remember the orientation of coloured bars, and reproduce them in the correct order (example: green first, blue second)

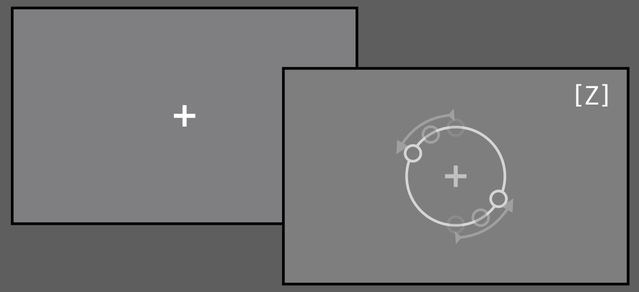
Before block:
color & order cue

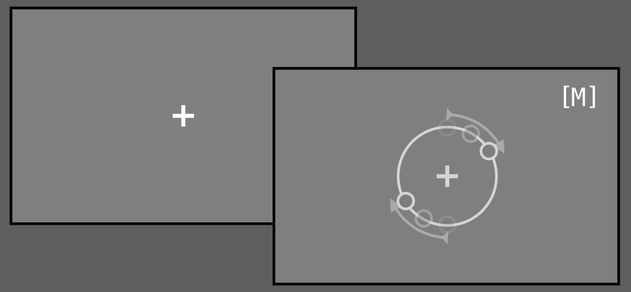
During trial:
view & memorise the bar orientations



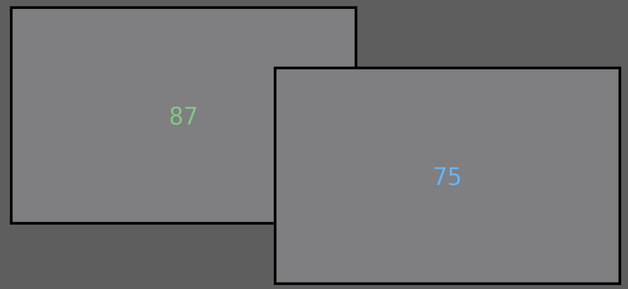


After delay:
reproduce the orientations in the correct order using the response dial





End of trial:
feedback (0–100%) for each report



ALL CLEAR?