Montréal
CANADA
ACBS Annual
World Conference 16
July 24-29, 2018

Sign In for CEU's

Derived Social Modeling of Spatial Perspective via Relational Triangulation

Paul Guinther, Ph.D.

With thanks to Nic Hooper, Ph.D. & Chelsea Walden for data collection

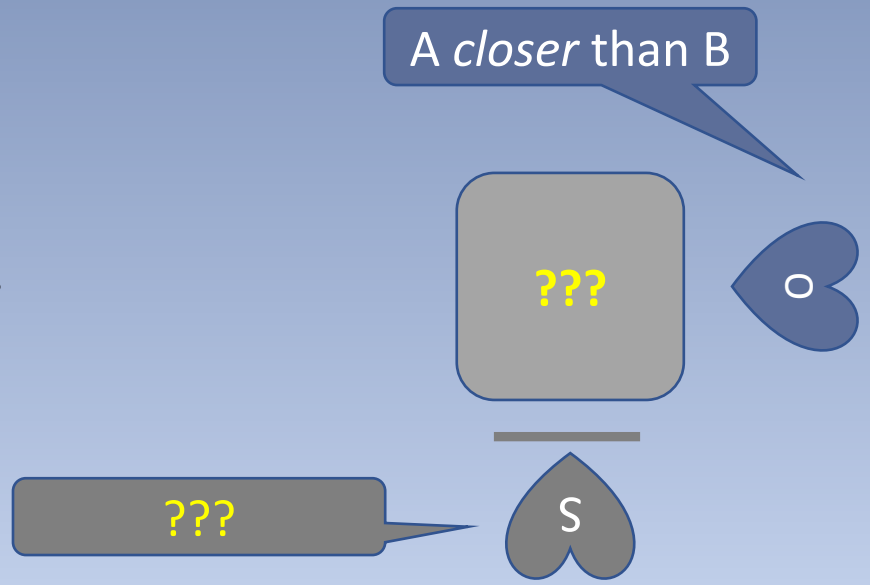
Presented at 16th ACBS World Conference, July 2018, Montreal

Study Aim

- Bring derived social modeling of spatial perspective under contextual control
  - In verbally competent neurotypical adults
  - Using operant match-to-sample training and testing procedures
    - Relational Triangulation Perspective Taking Protocol (RT-PTP; Guinther 2017)

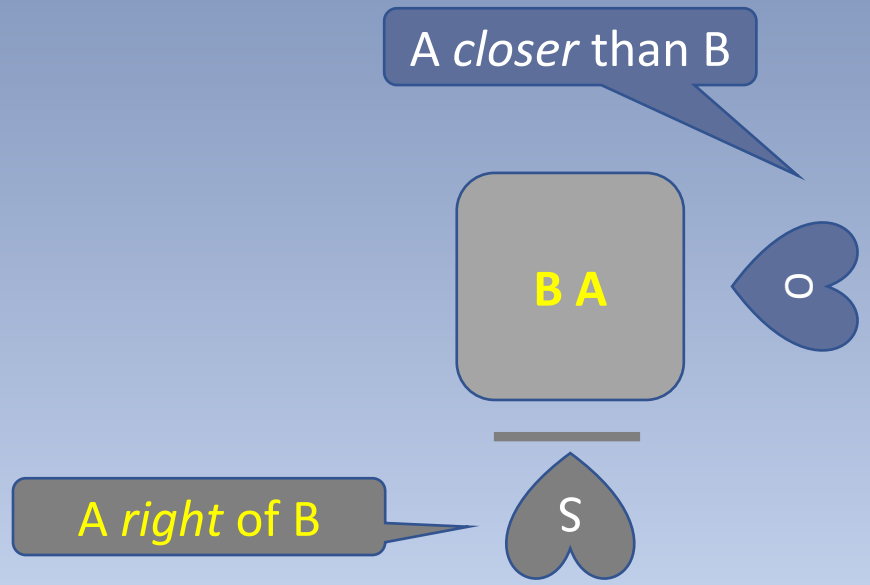
Derived Modeling of Spatial Perspective

- **You are sitting blindfolded at a square table that seats four. On top of the table are an apple and a banana.**
  - **A person seated to your *right* says "The apple is *closer* than the banana." What should you say?**
    - The apple is closer than the banana.
    - The apple is further than the banana.
    - The apple is to the left of the banana.
    - The apple is to the right of the banana.



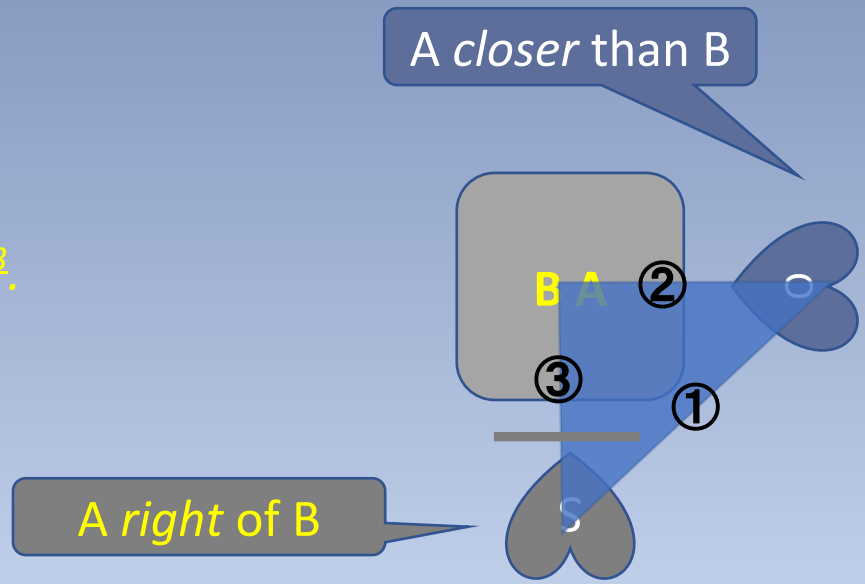
Derived Modeling of Spatial Perspective

- **You are sitting blindfolded at a square table that seats four. On top of the table are an apple and a banana.**
  - **A person seated to your *right* says "The apple is *closer* than the banana." What should you say?**
    - The apple is closer than the banana.
    - The apple is further than the banana.
    - The apple is to the left of the banana.
    - *The apple is to the right of the banana.*

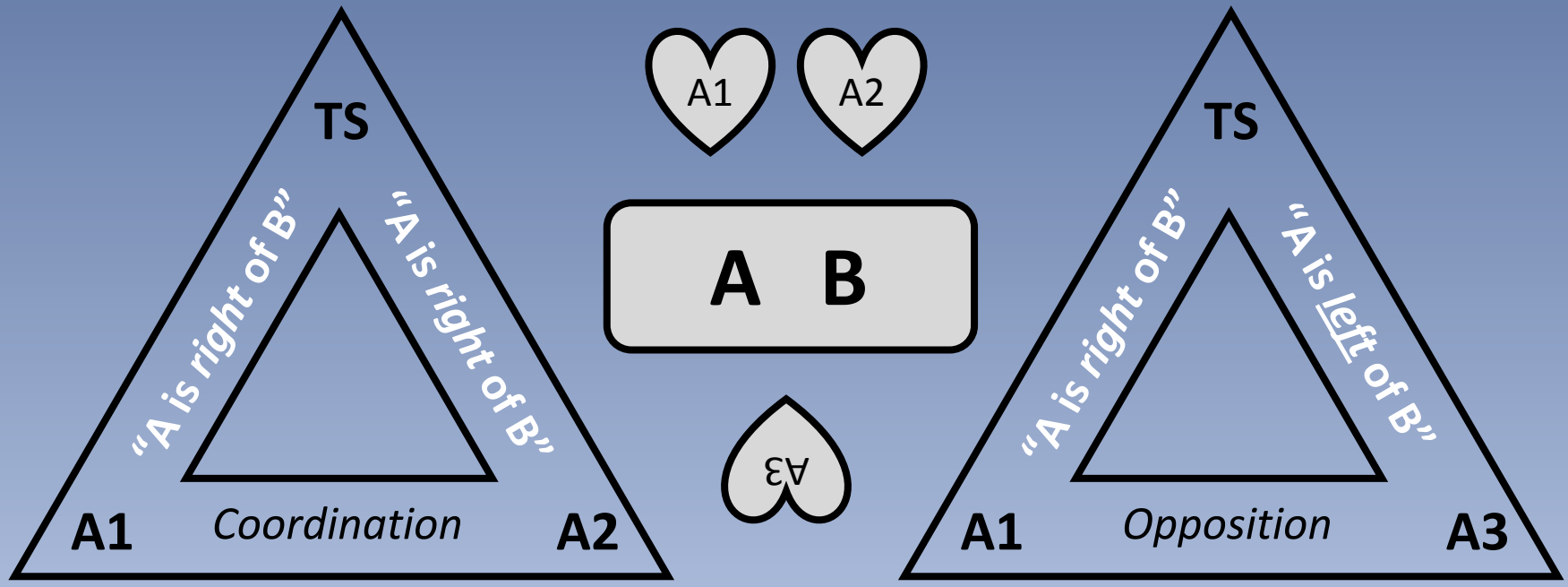


Derived Modeling of Spatial Perspective

- **You are sitting blindfolded at a square table that seats four. On top of the table are an apple and a banana.**
  - **A person seated *to your right*[1] says "The *apple is closer than the banana*[2]." What should you say?**
    - The apple is closer than the banana.
    - The apple is further than the banana.
    - The apple is to the left of the banana.
    - *The apple is to the right of the banana*[3].



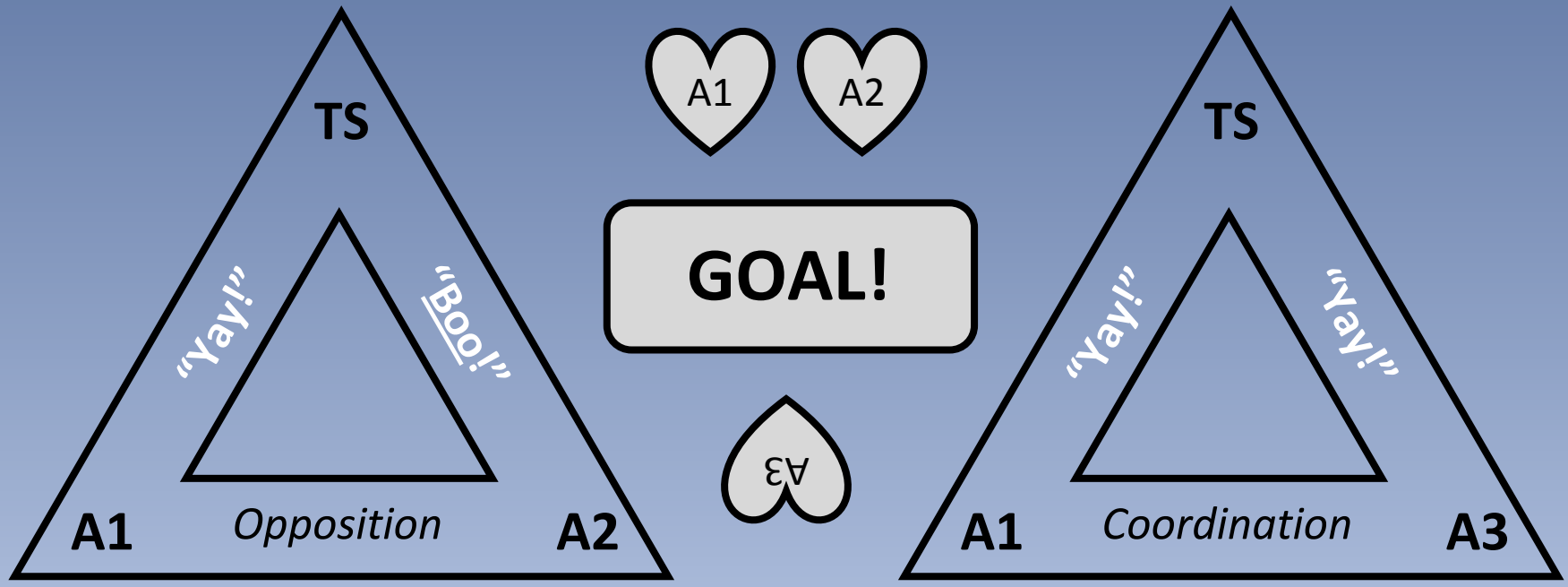
Spatial Relational Triangles



Same Spatial Alignment
(Same Pointing Origin)
(Facing Same Target)

Different Spatial Alignment
(Different Pointing Origin)
(Facing Same Target)

Material Relational Triangles

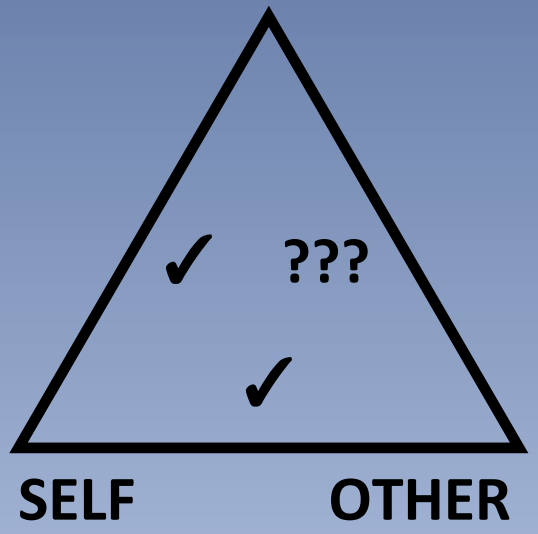


Different Material Alignment
(Act Opposite Ways)
e.g., Opponents

Same Material Alignment
(Act Same Way)
e.g., Teammates

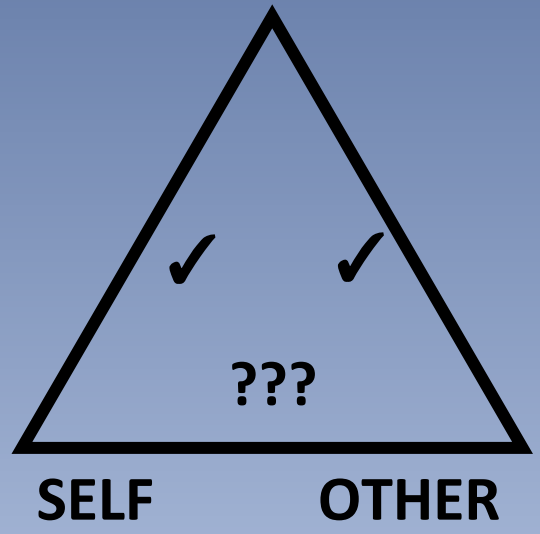
Relational Triangulation Framework

Guinther (JEAB, 2017; in press)



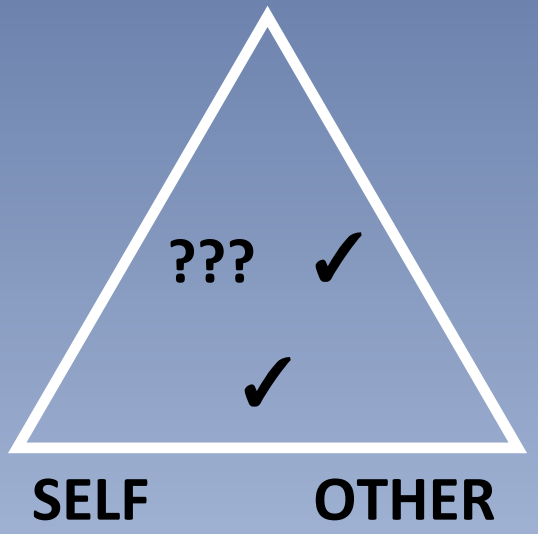
Derived Perspective Taking

How will they act?



Derived Aligning

How do we act?

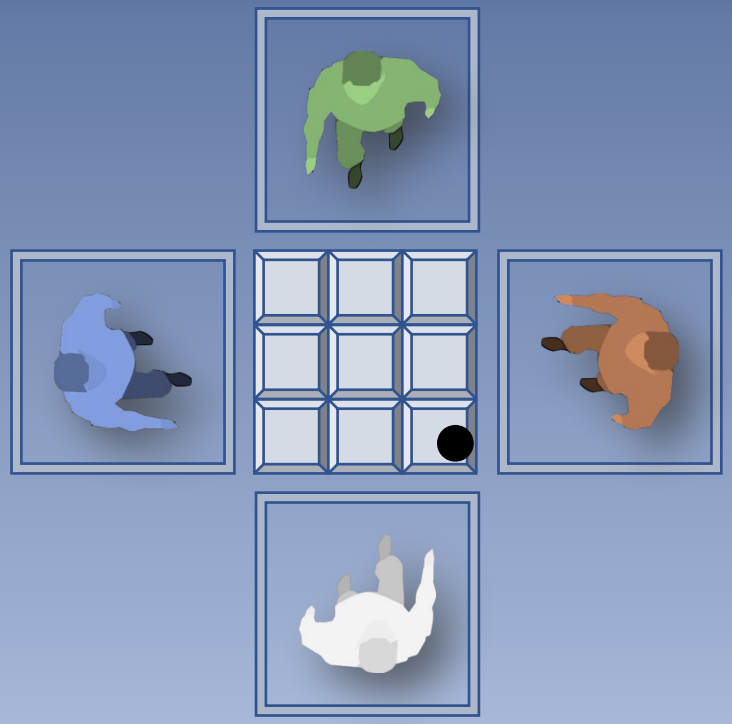


Derived Modeling

How should I act?

7	8	9	YONDER
4	5	6	THERE
1	2	3	HERE
LEFT	CENTER	RIGHT	

Where is the black beacon?



Study Phase 1: Train relative deictic pointing

Where is the black beacon?

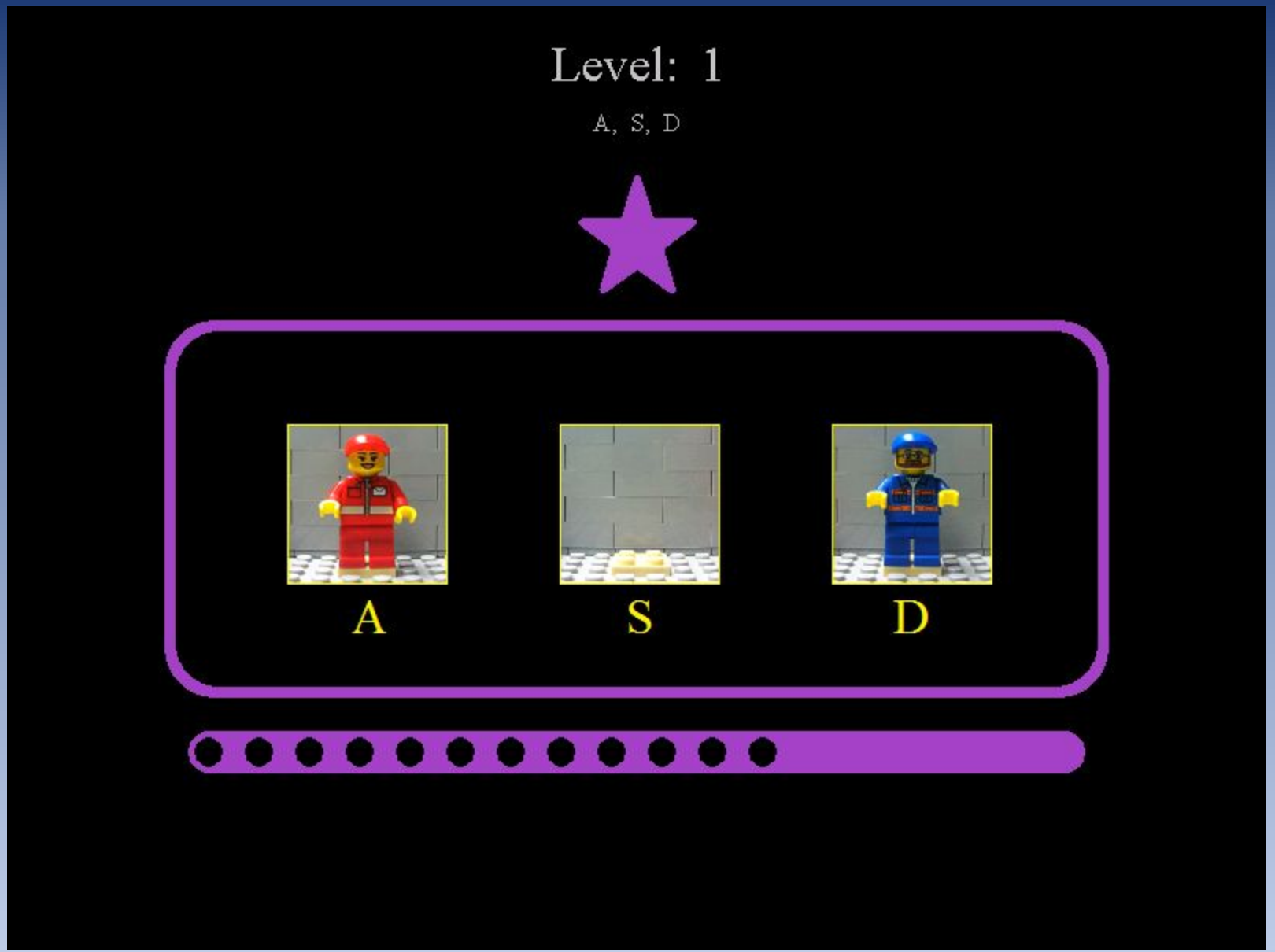
Yonder Left (K^7)

Yonder Right (K^9)

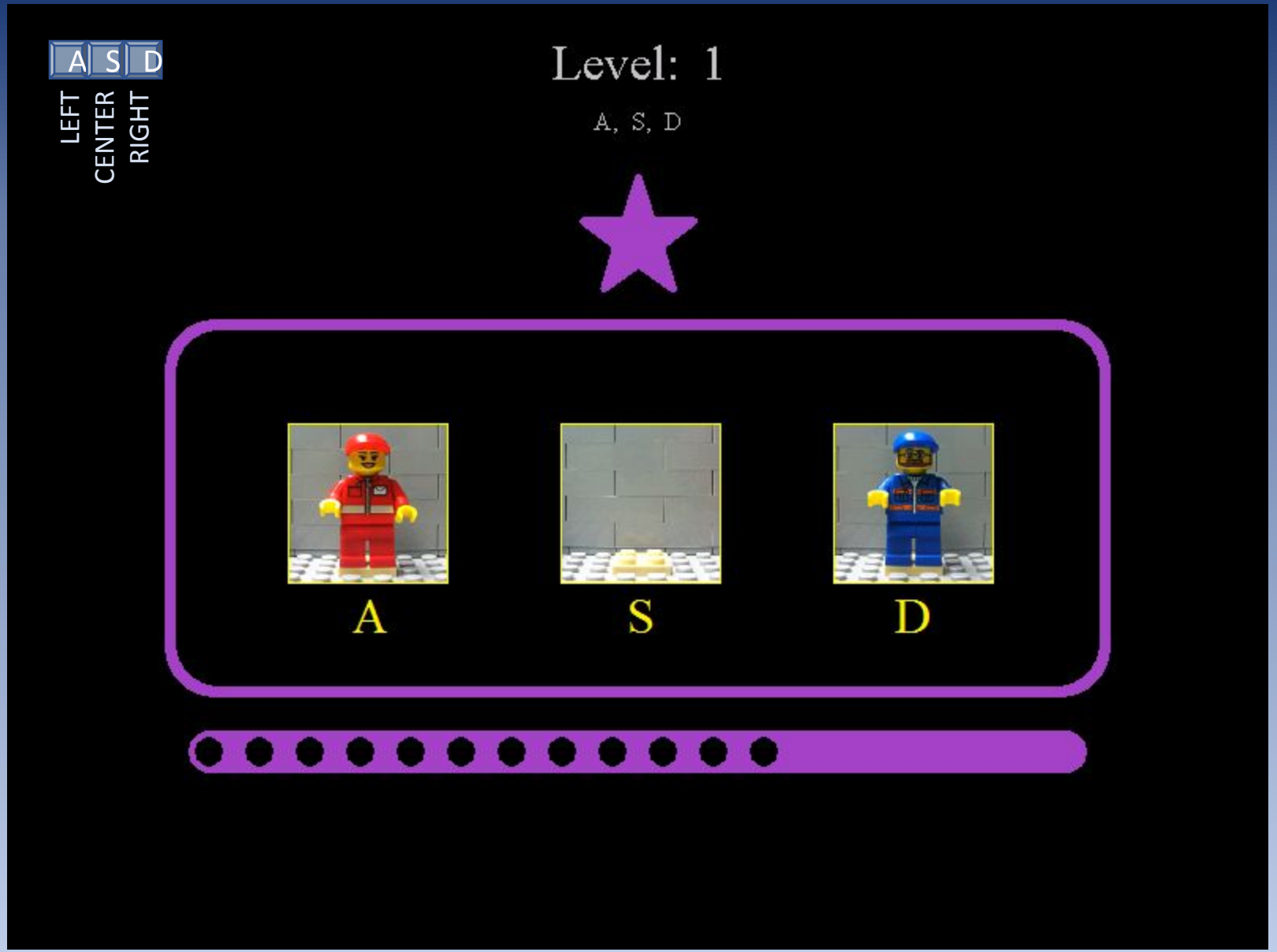
Here Left (K^1)

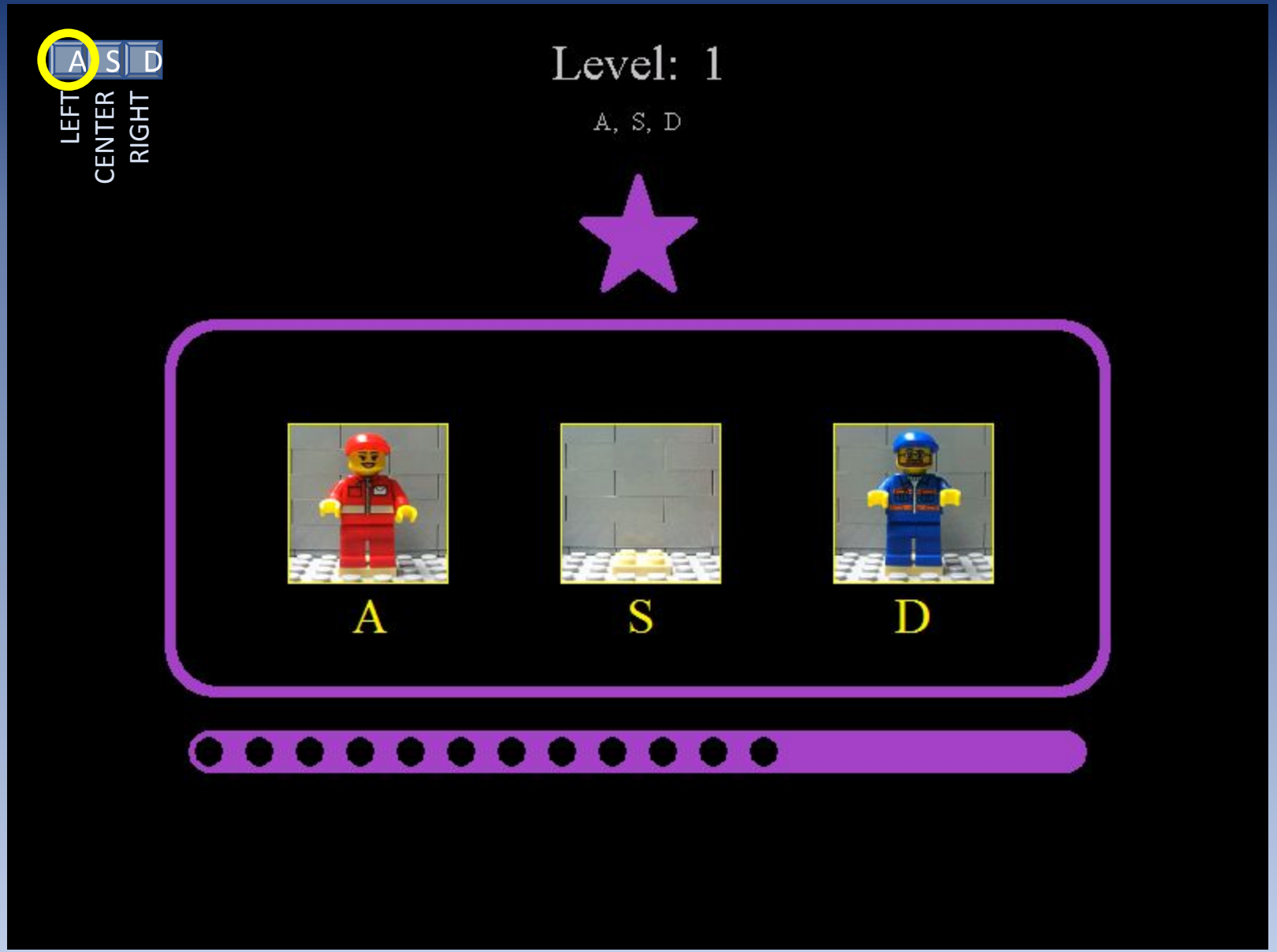
Here Right (K^3)

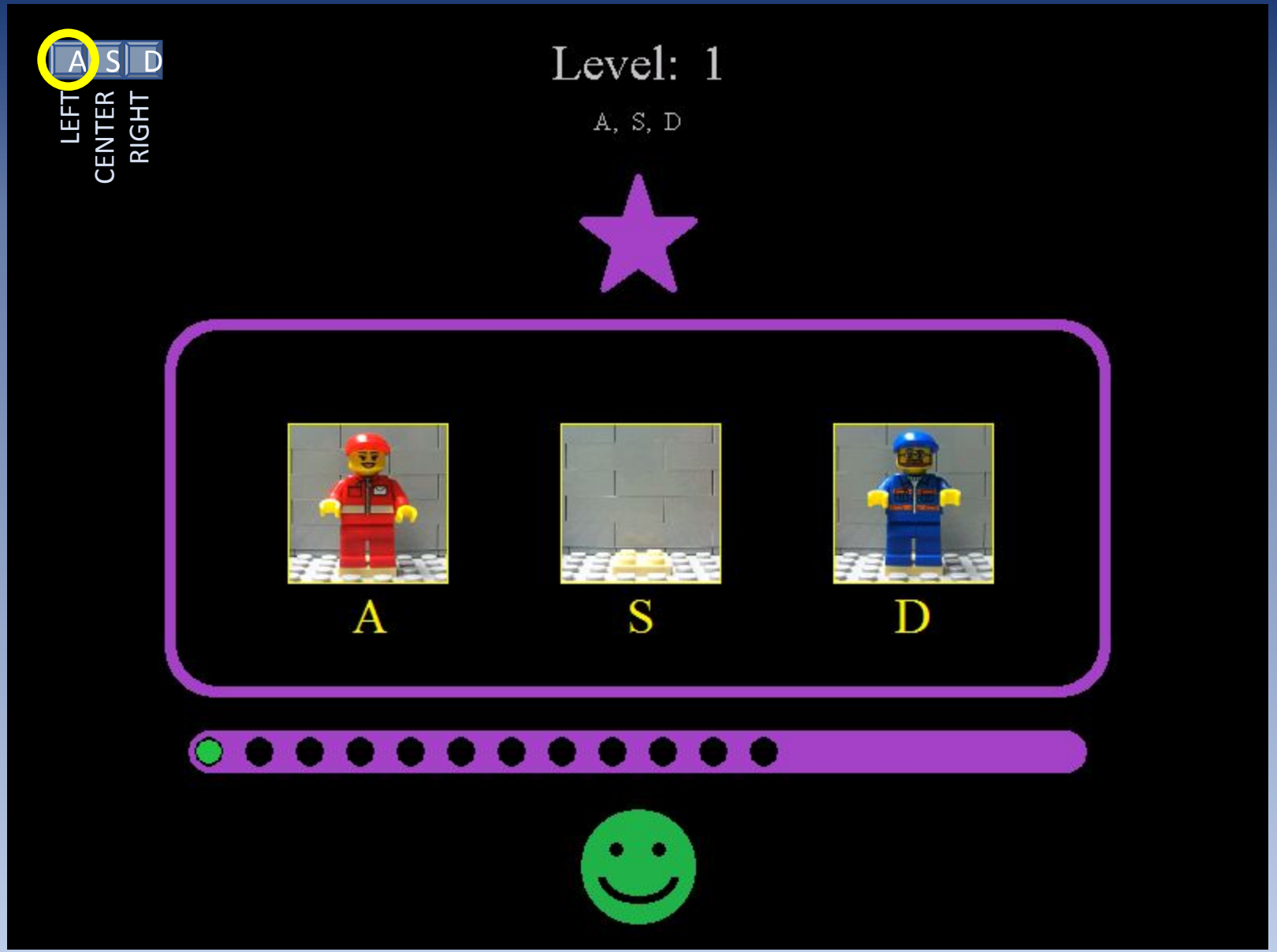
Study Phase 1: Train relative deictic pointing

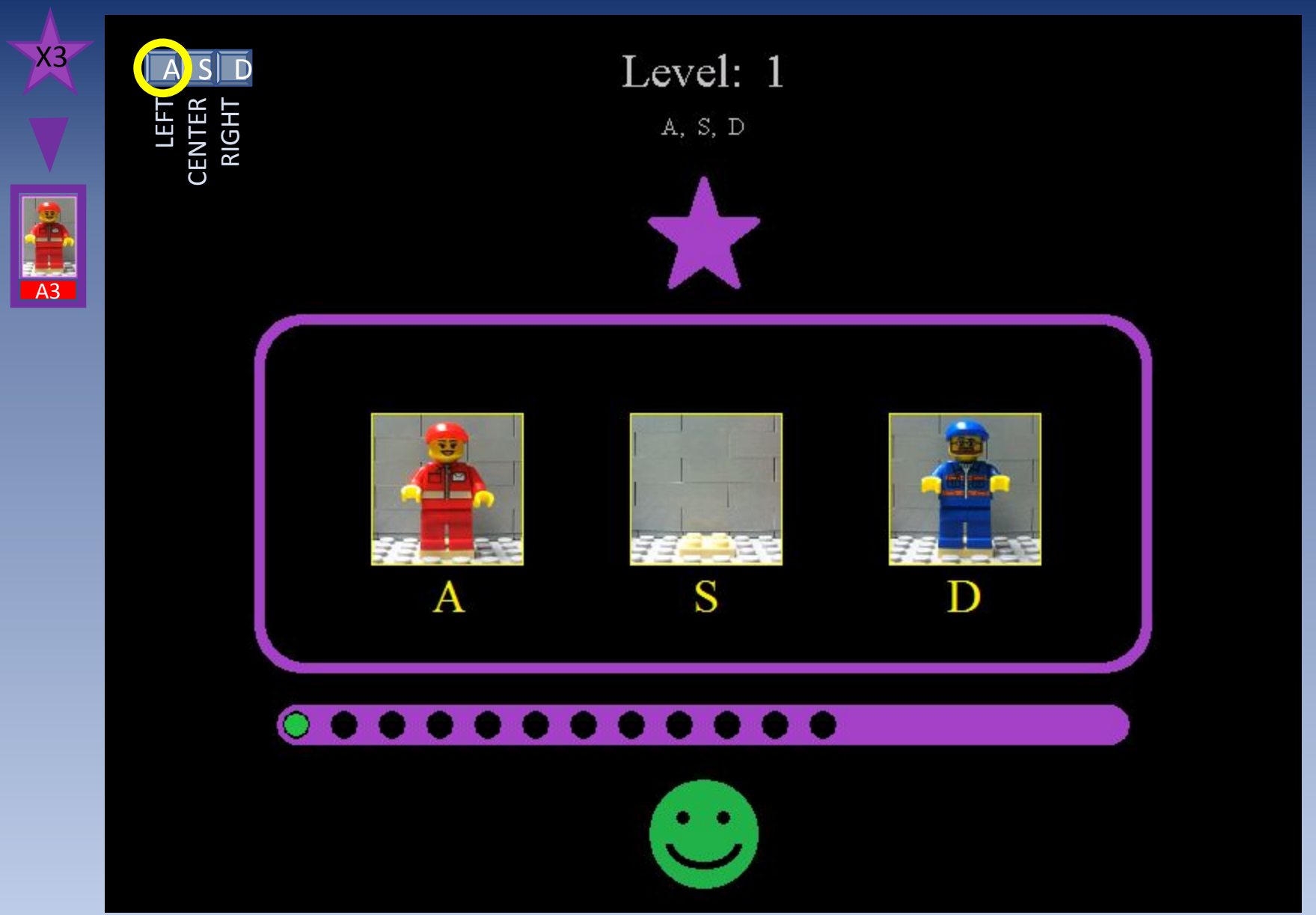


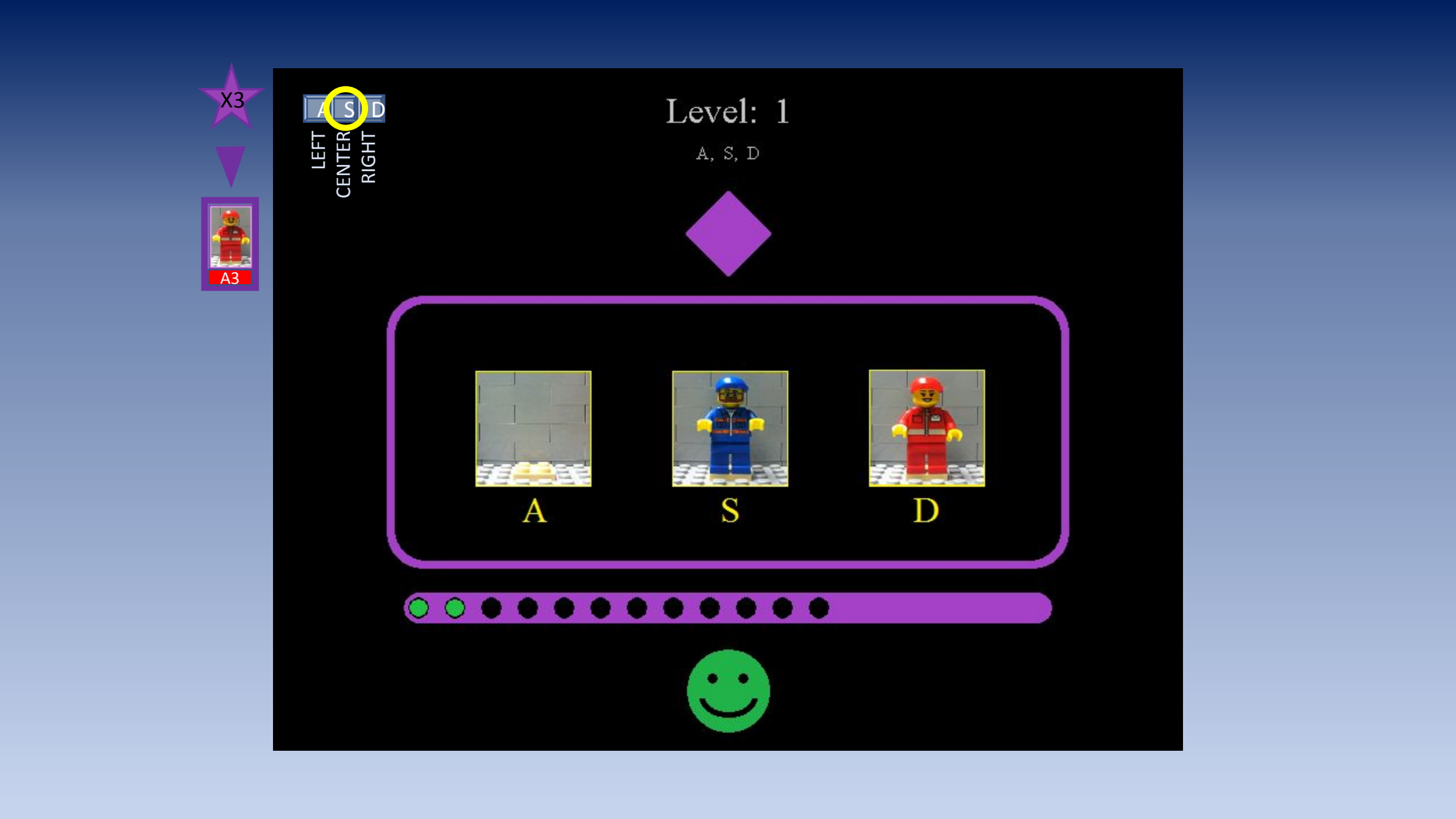
Relational Triangulation Perspective Taking Protocol (RT-PTP; Guinther, 2017)

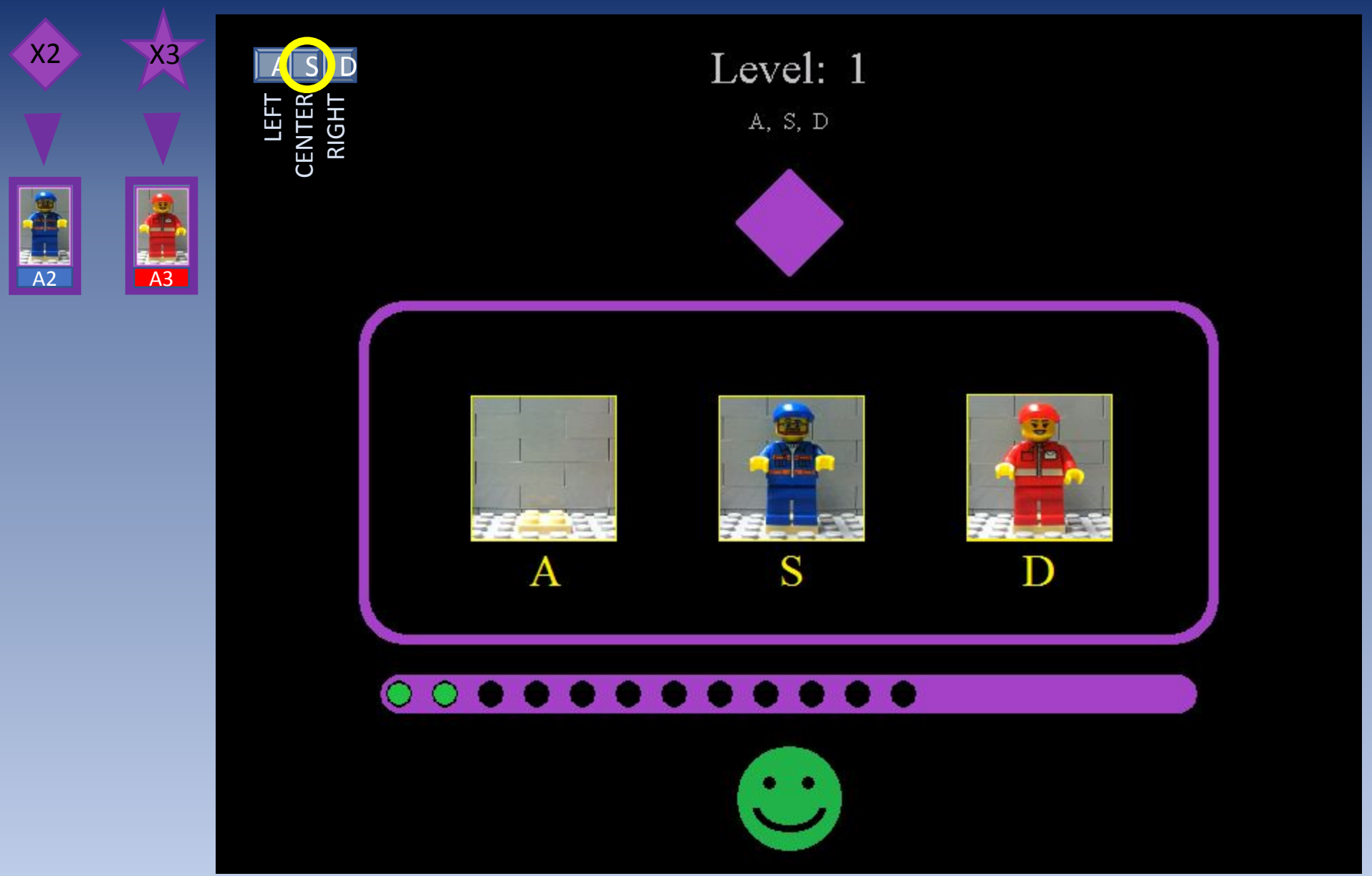

A S D
LEFT
CENTER
RIGHT
Level: 1
A, S, D
A
S
D


A S D
LEFT
CENTER
RIGHT
Level: 1
A, S, D
A
S
D


A S D
LEFT
CENTER
RIGHT
Level: 1
A, S, D
A
S
D


X3
A3
A S D
LEFT
CENTER
RIGHT
Level: 1
A, S, D
A
S
D


X3
A3
A S D
LEFT
CENTER
RIGHT
Level: 1
A, S, D
A
S
D


X2
X3
A2
A3
A S D
LEFT
CENTER
RIGHT
Level: 1
A, S, D
A
S
D

X2

X3

A2

A3

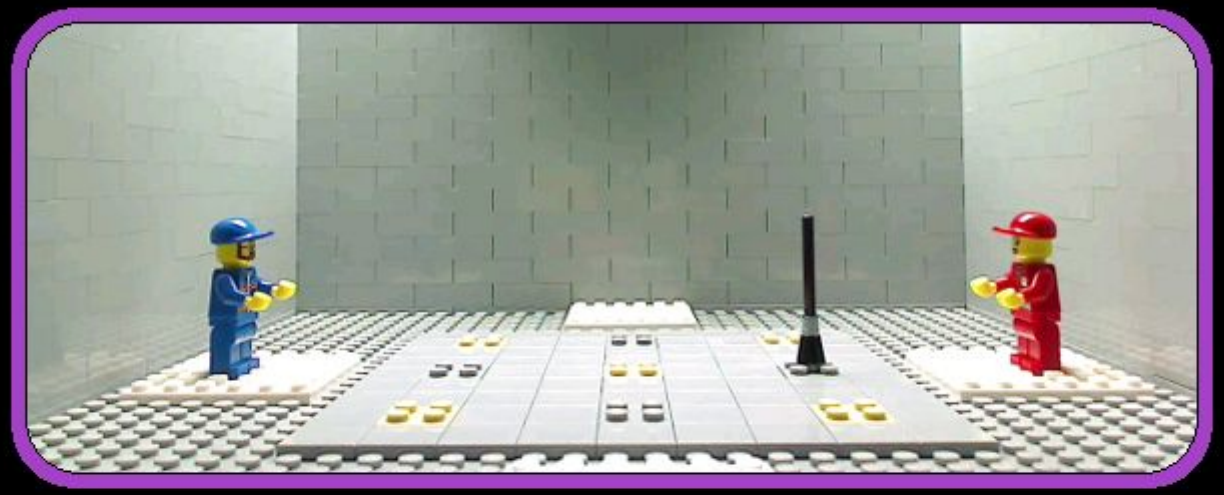
7	8	9
4	5	6
1	2	3

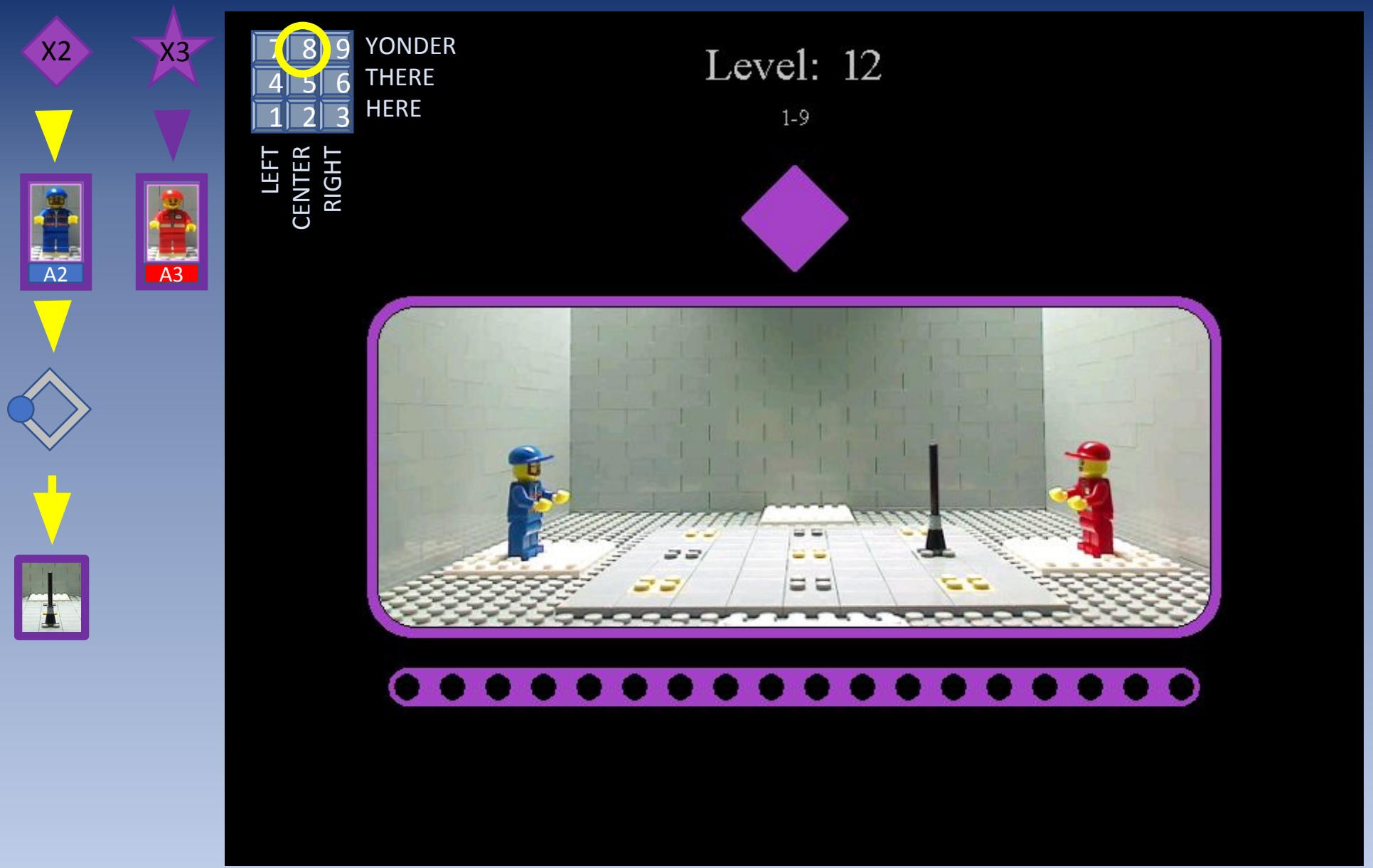
YONDER
THERE
HERE

LEFT
CENTER
RIGHT

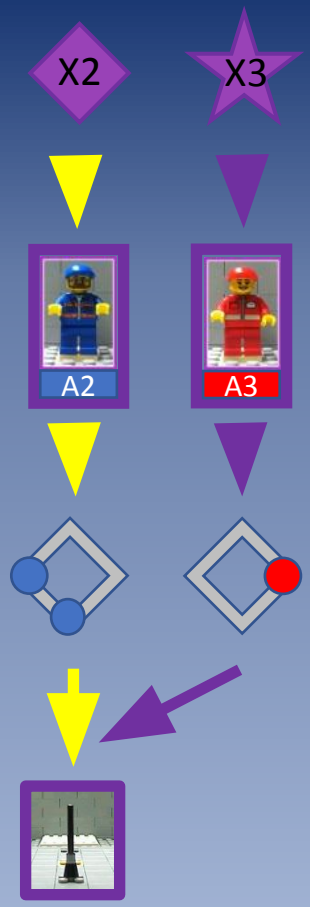
Level: 12

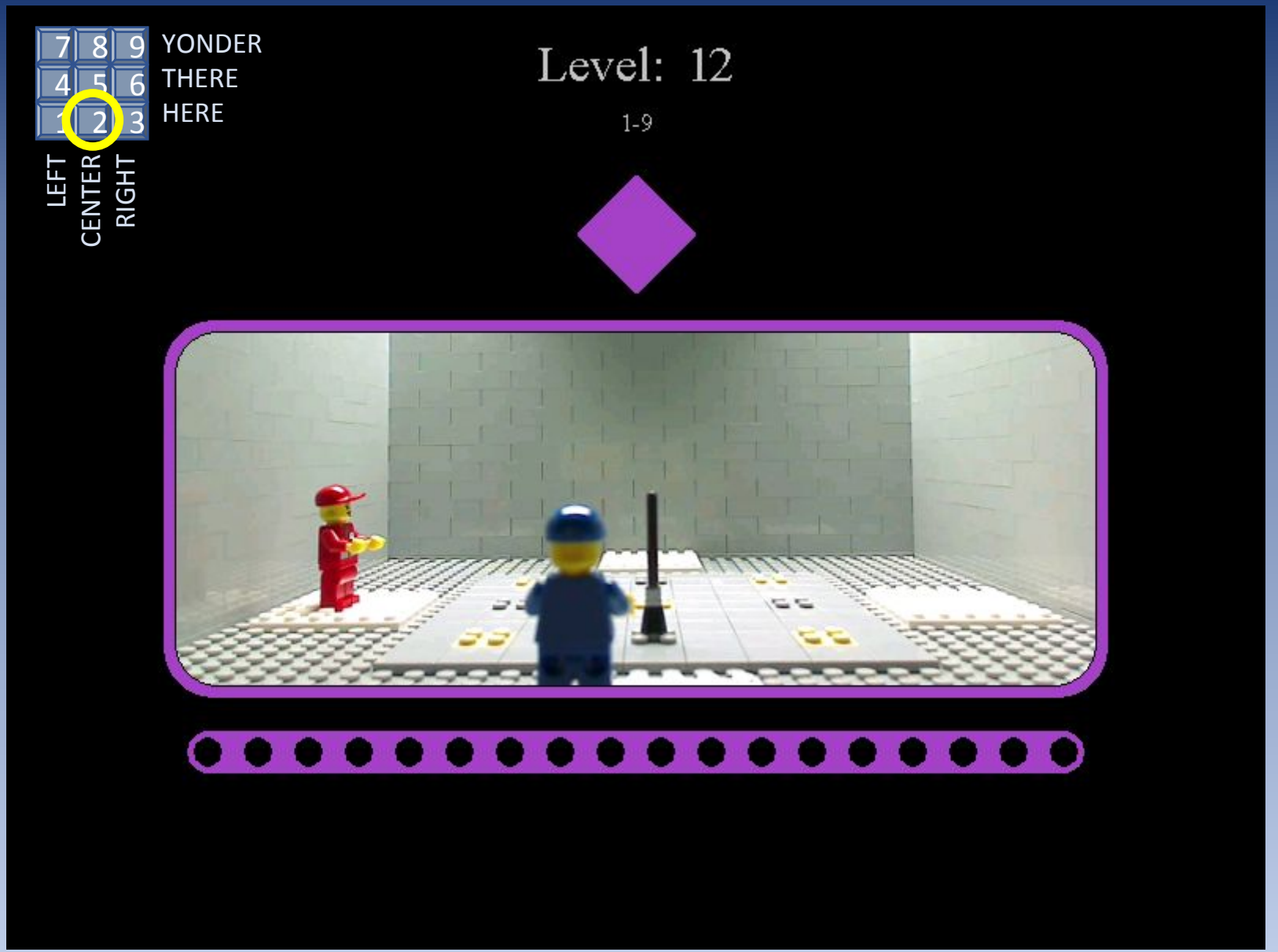
1-9

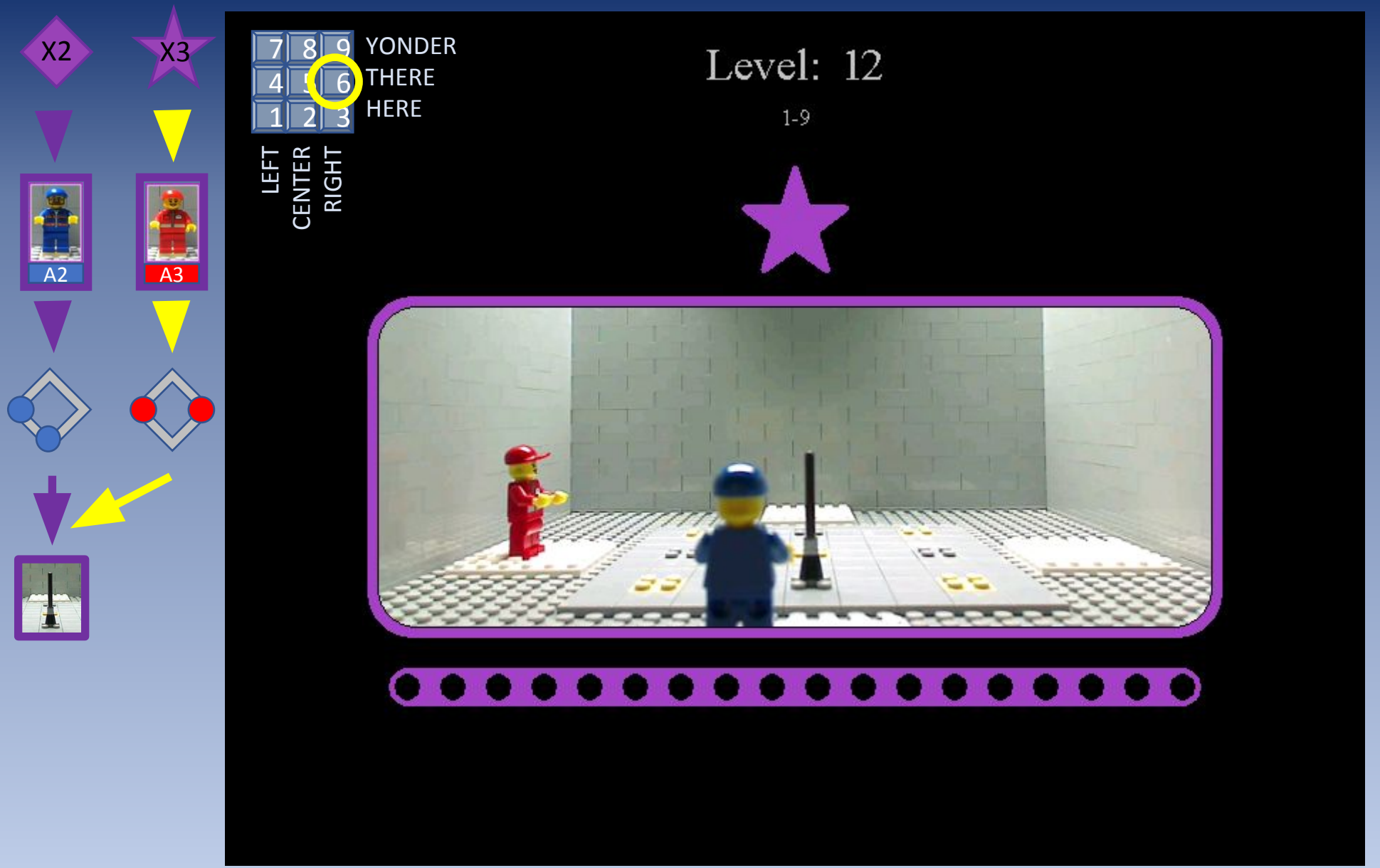


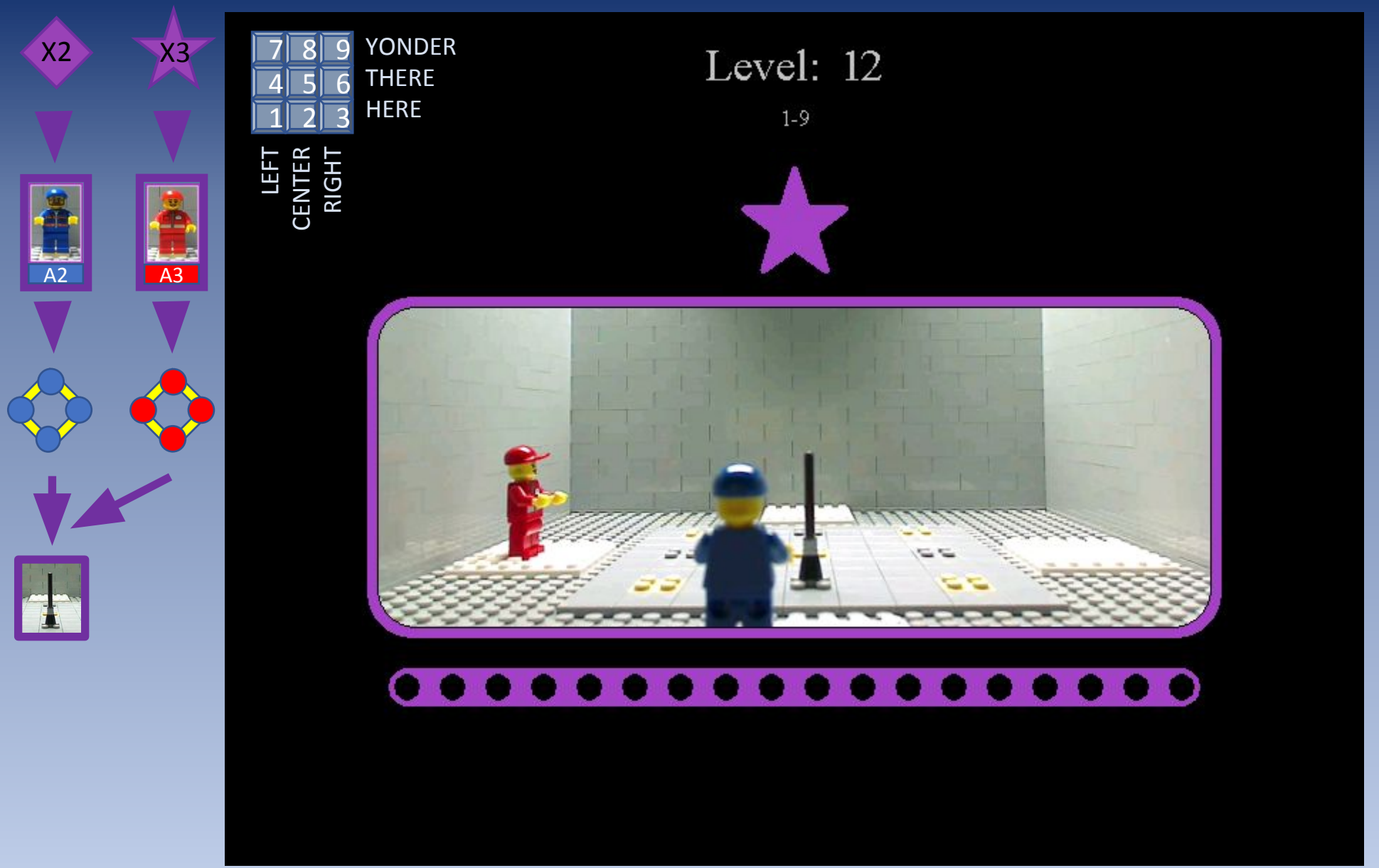

X2
X3
A2
A3
7 8 9
4 5 6
1 2 3
YONDER
THERE
HERE
LEFT
CENTER
RIGHT
Level: 12
1-9

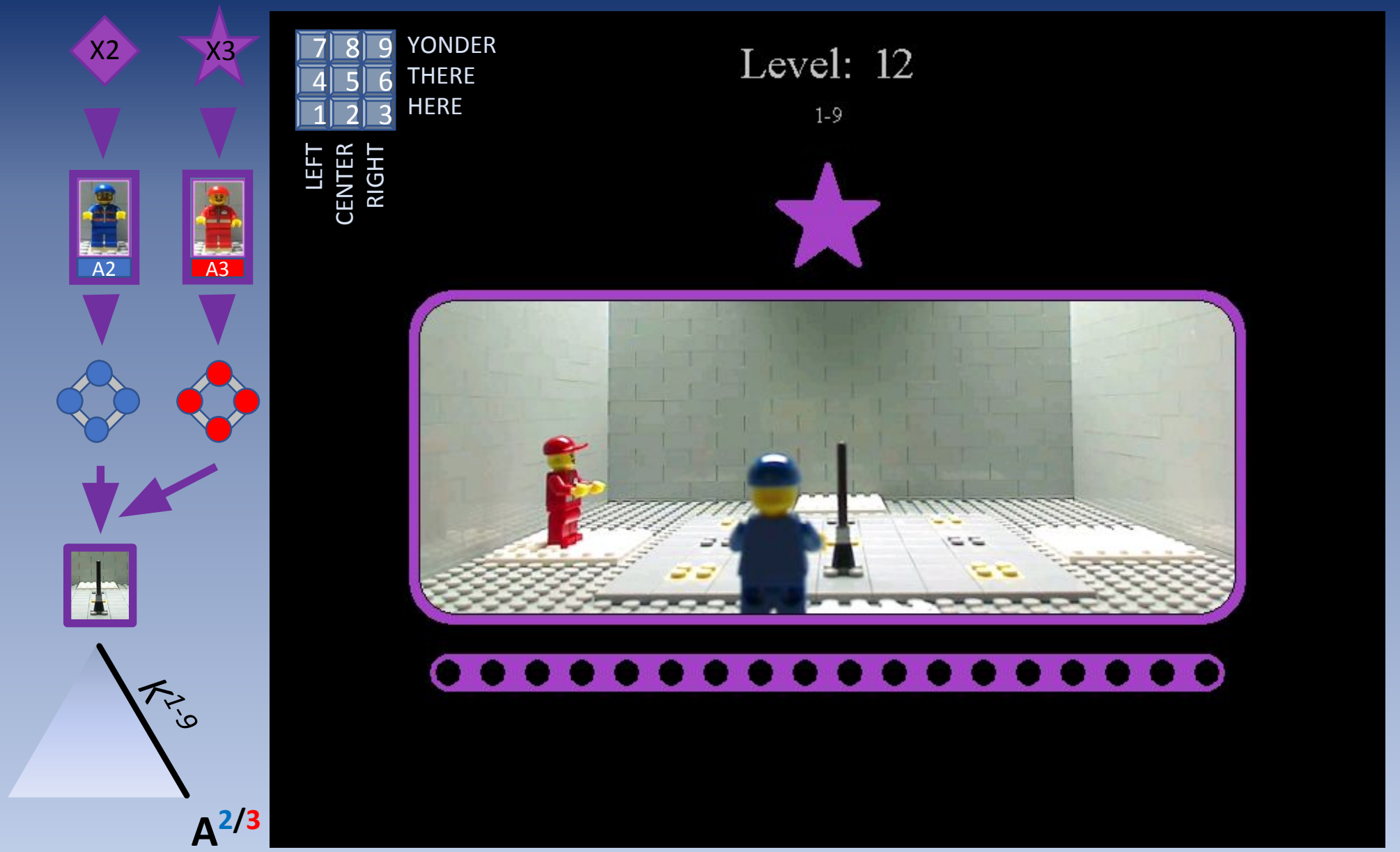

X2
X3
A2
A3
7 8 9 YONDER
4 5 6 THERE
1 2 3 HERE
LEFT
CENTER
RIGHT
Level: 12
1-9

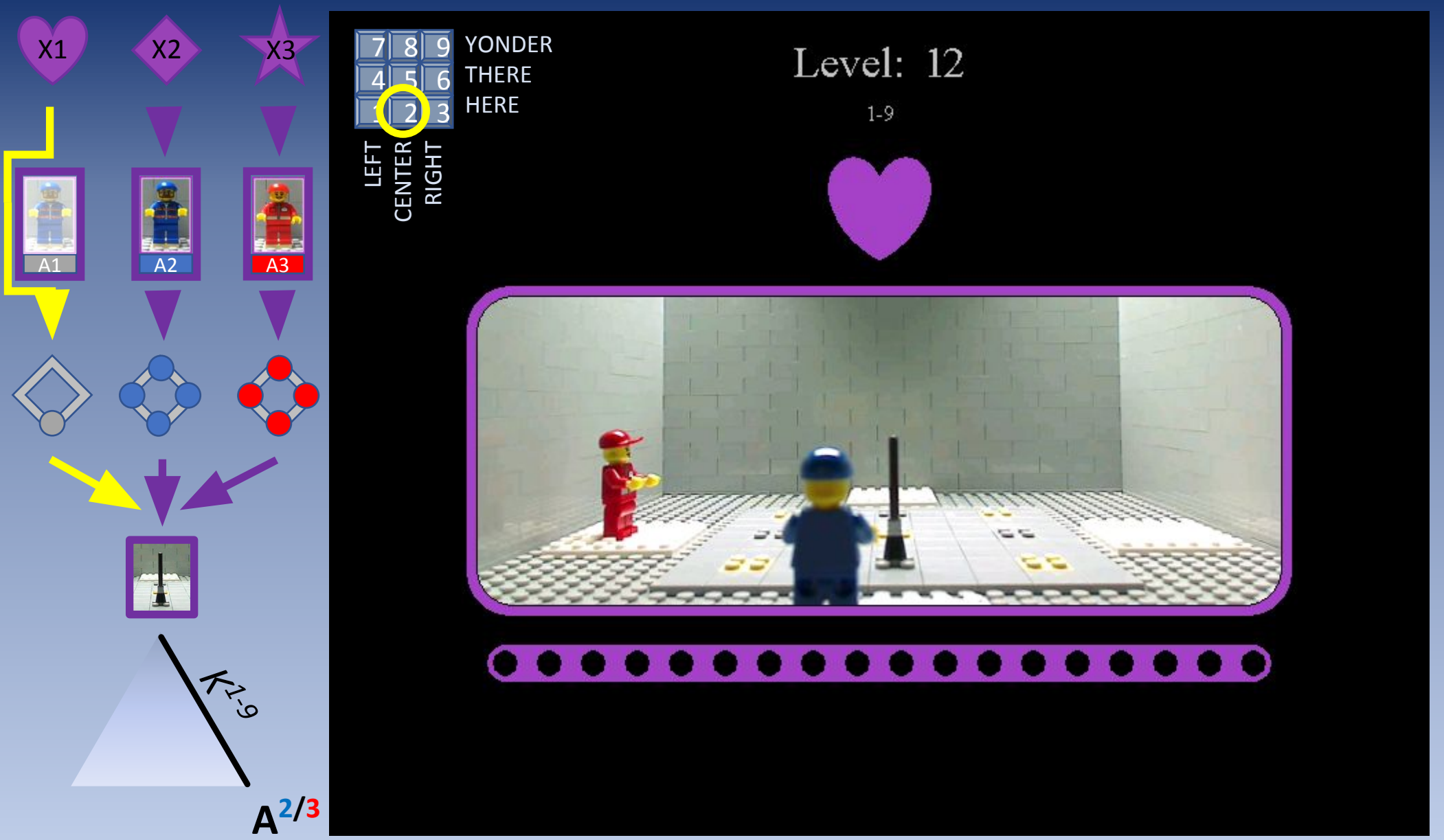

X2
X3
A2
A3

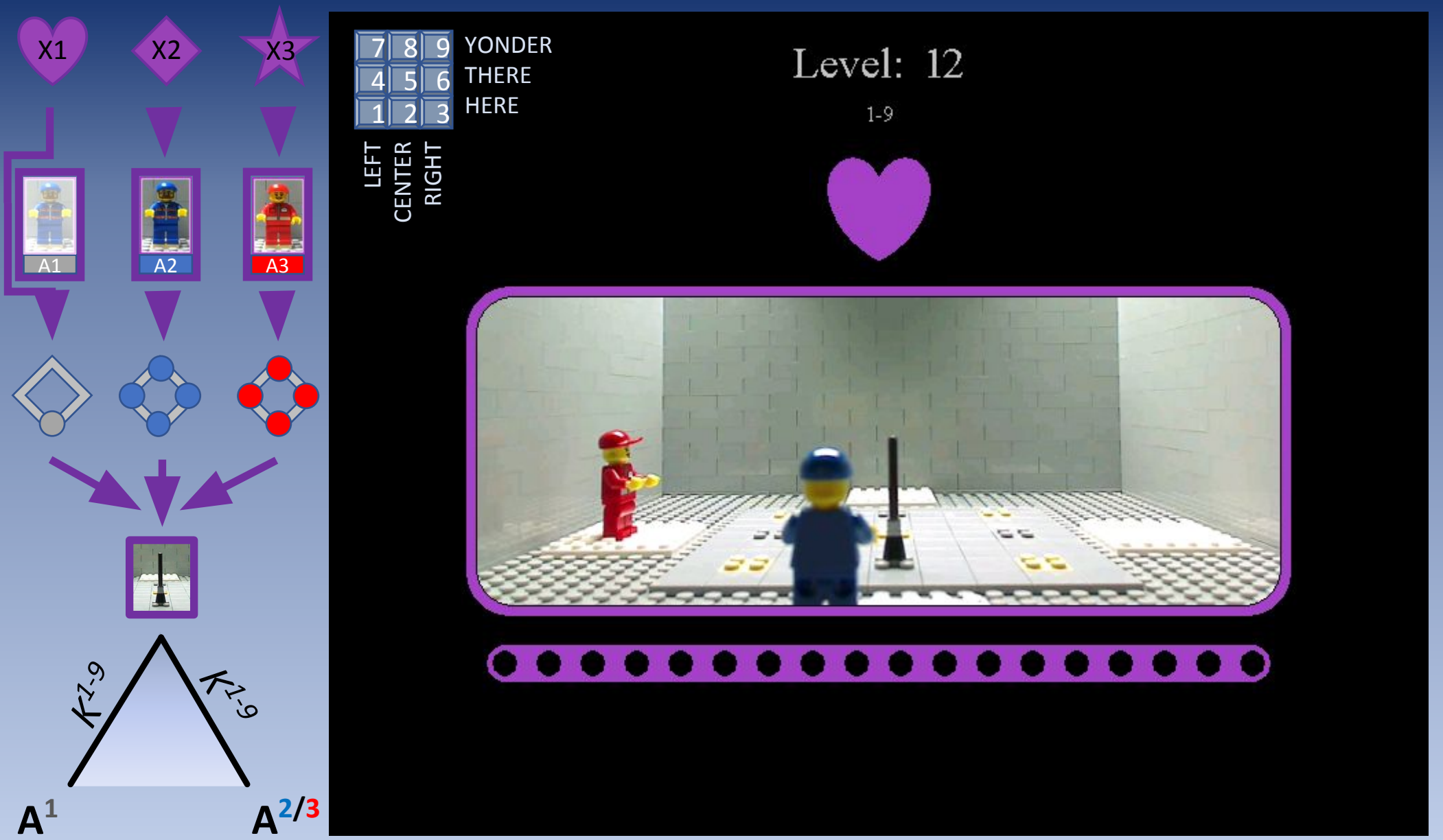

7 8 9 YONDER
4 5 6 THERE
1 2 3 HERE
LEFT
CENTER
RIGHT
Level: 12
1-9

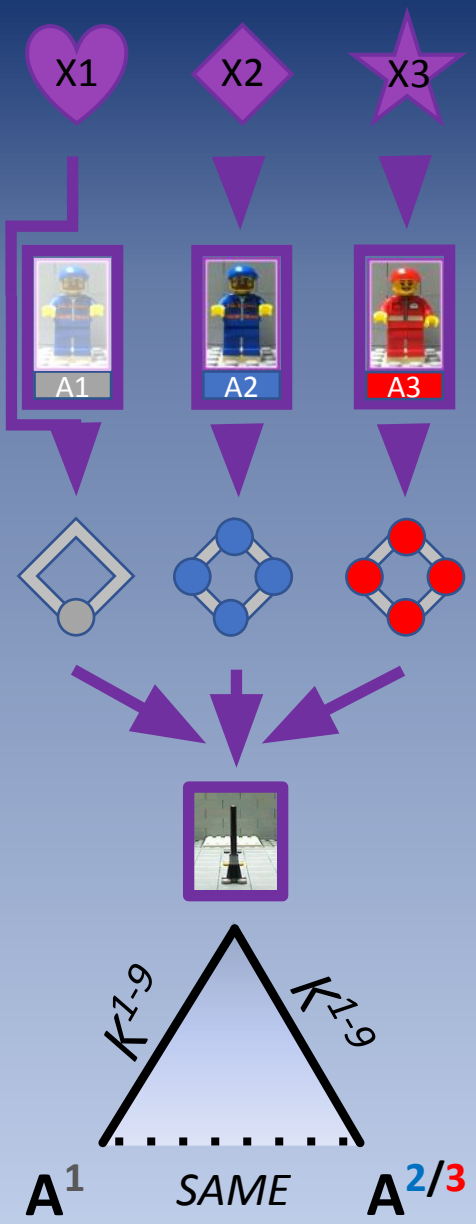

X2
X3
A2
A3
7 8 9 YONDER
4 5 6 THERE
1 2 3 HERE
LEFT
CENTER
RIGHT
Level: 12
1-9

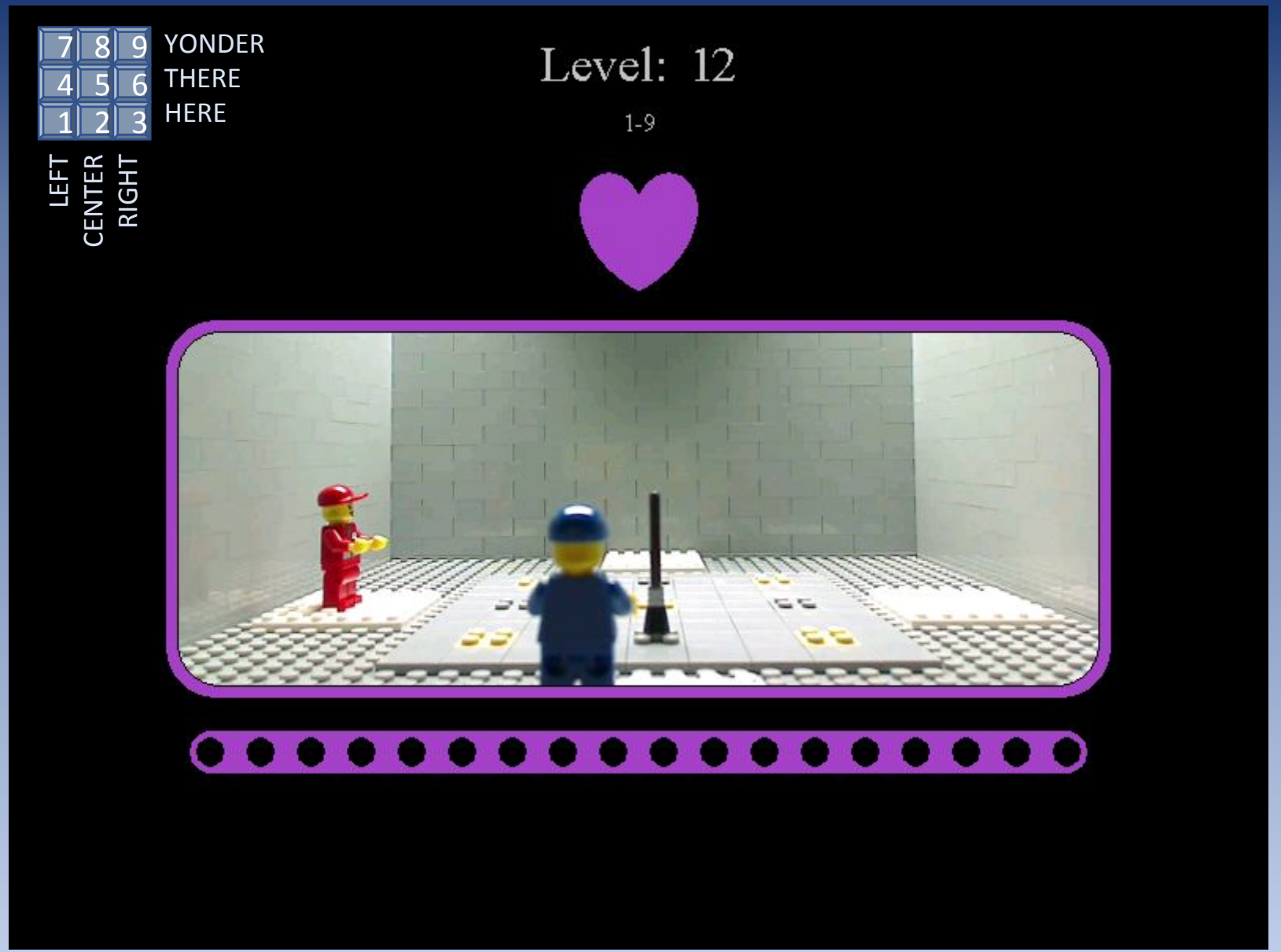

X2
X3
A2
A3
7 8 9 YONDER
4 5 6 THERE
1 2 3 HERE
LEFT
CENTER
RIGHT
Level: 12
1-9


X2
X3
A2
A3
7 8 9 YONDER
4 5 6 THERE
1 2 3 HERE
LEFT
CENTER
RIGHT
Level: 12
1-9
K1-9
A2/3


X1
X2
X3
A1
A2
A3
K1-9
A2/3
7 8 9 YONDER
4 5 6 THERE
1 2 3 HERE
LEFT
CENTER
RIGHT
Level: 12
1-9


X1
X2
X3
A1
A2
A3
7 8 9 YONDER
4 5 6 THERE
1 2 3 HERE
LEFT
CENTER
RIGHT
Level: 12
1-9
K1-9
K1-9
A1
A2/3


X1
X2
X3
A1
A2
A3
K1-9
K1-9
A1
SAME
A2/3

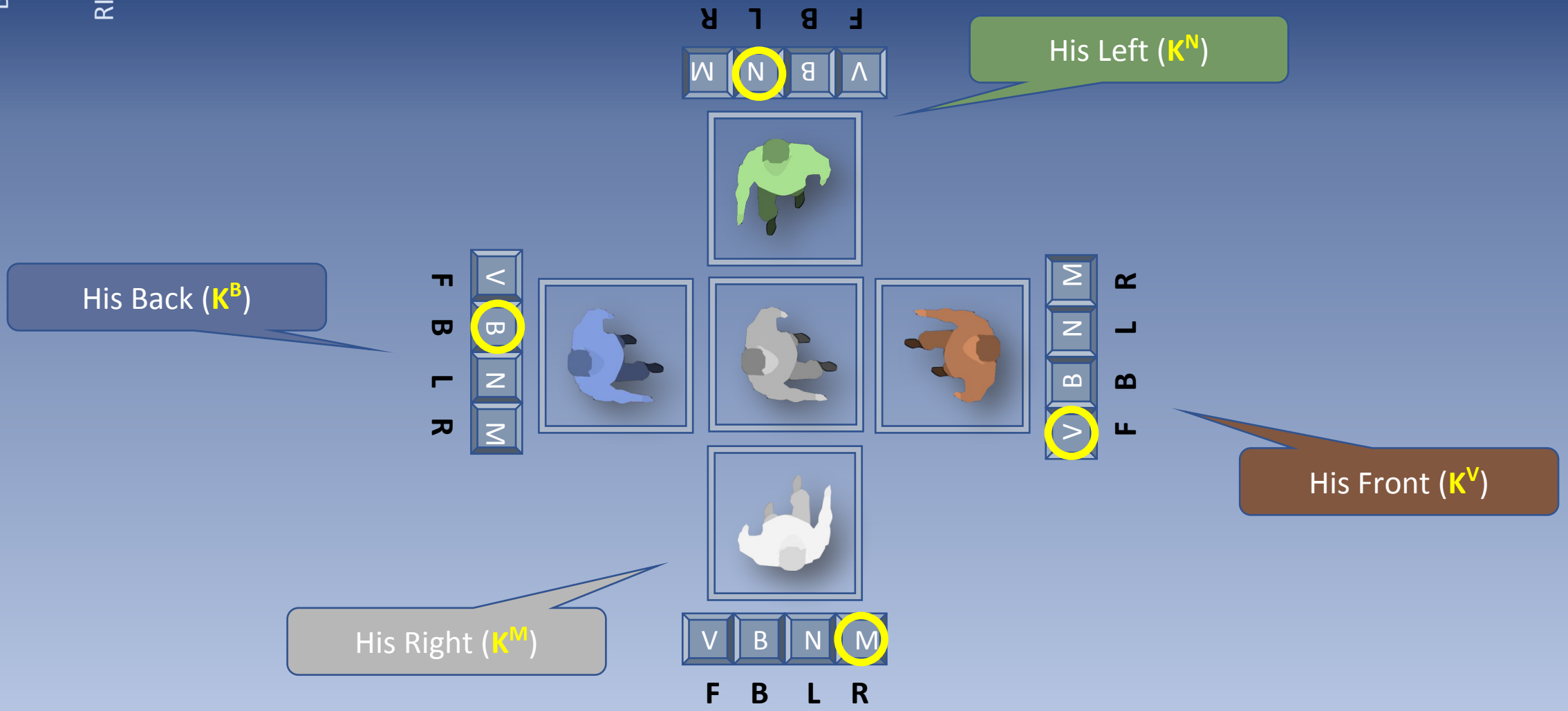

7 8 9 YONDER
4 5 6 THERE
1 2 3 HERE
LEFT
CENTER
RIGHT
Level: 12
1-9

V B N M

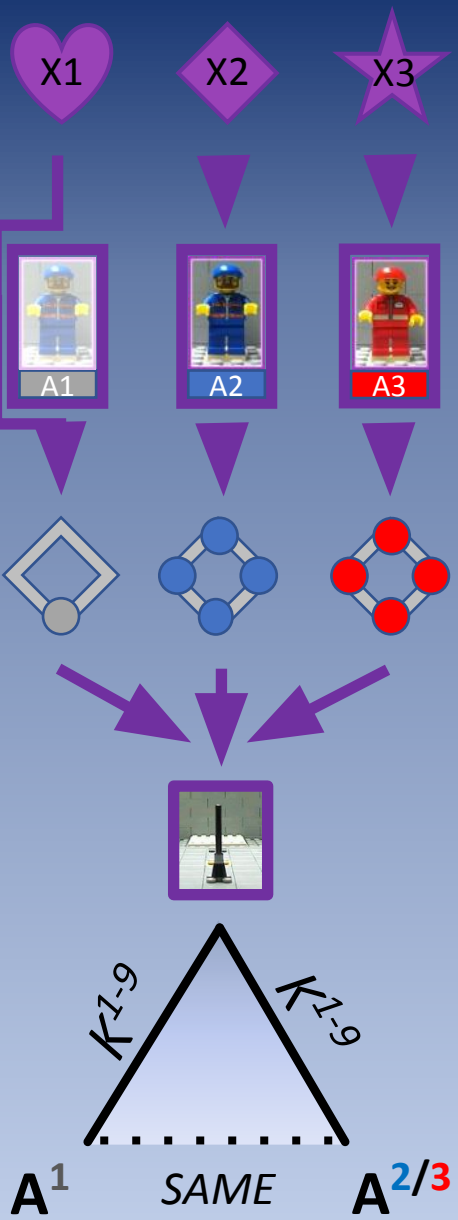
FRONT BACK LEFT RIGHT

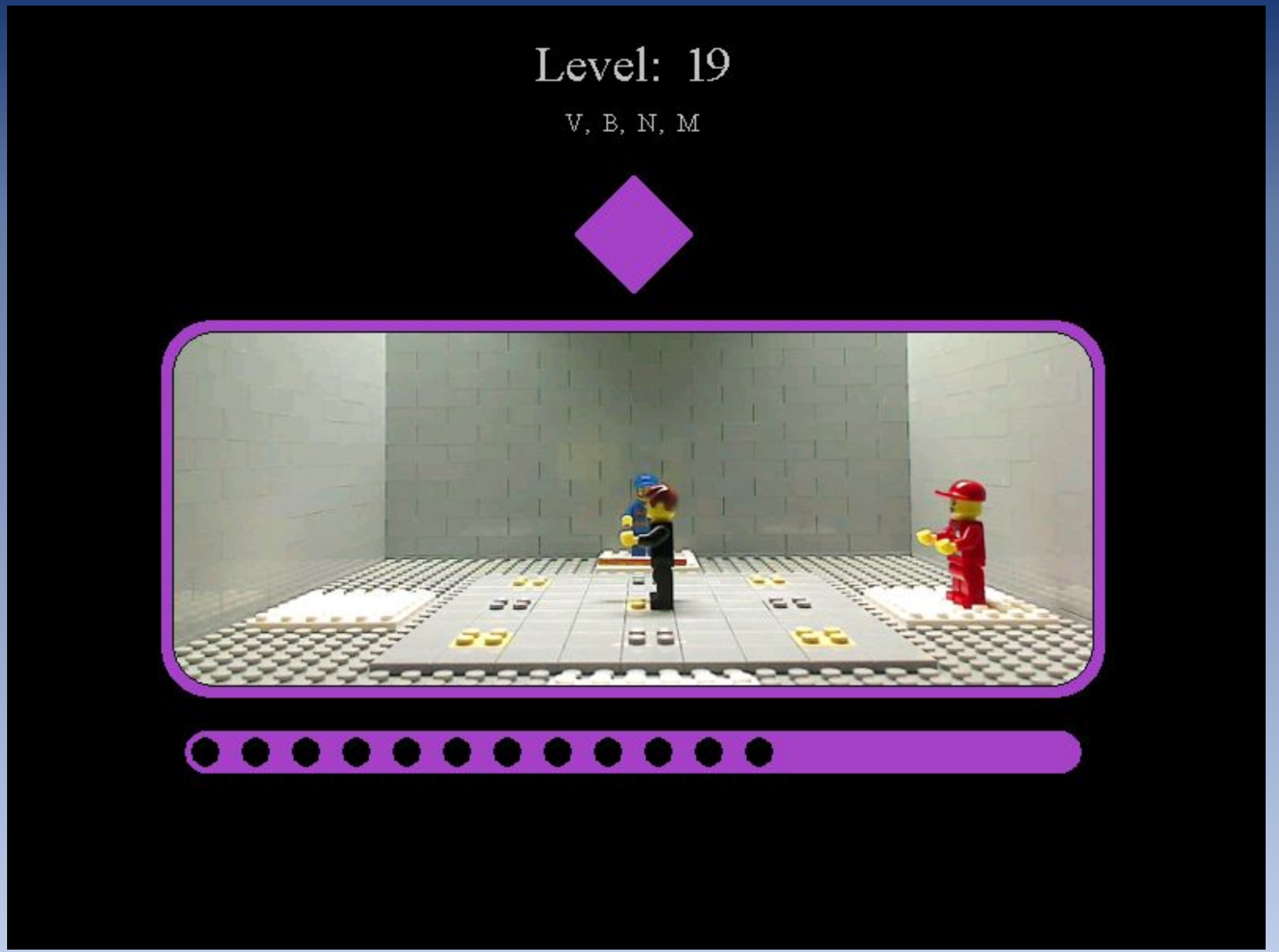
Which side of the black figure is facing you?

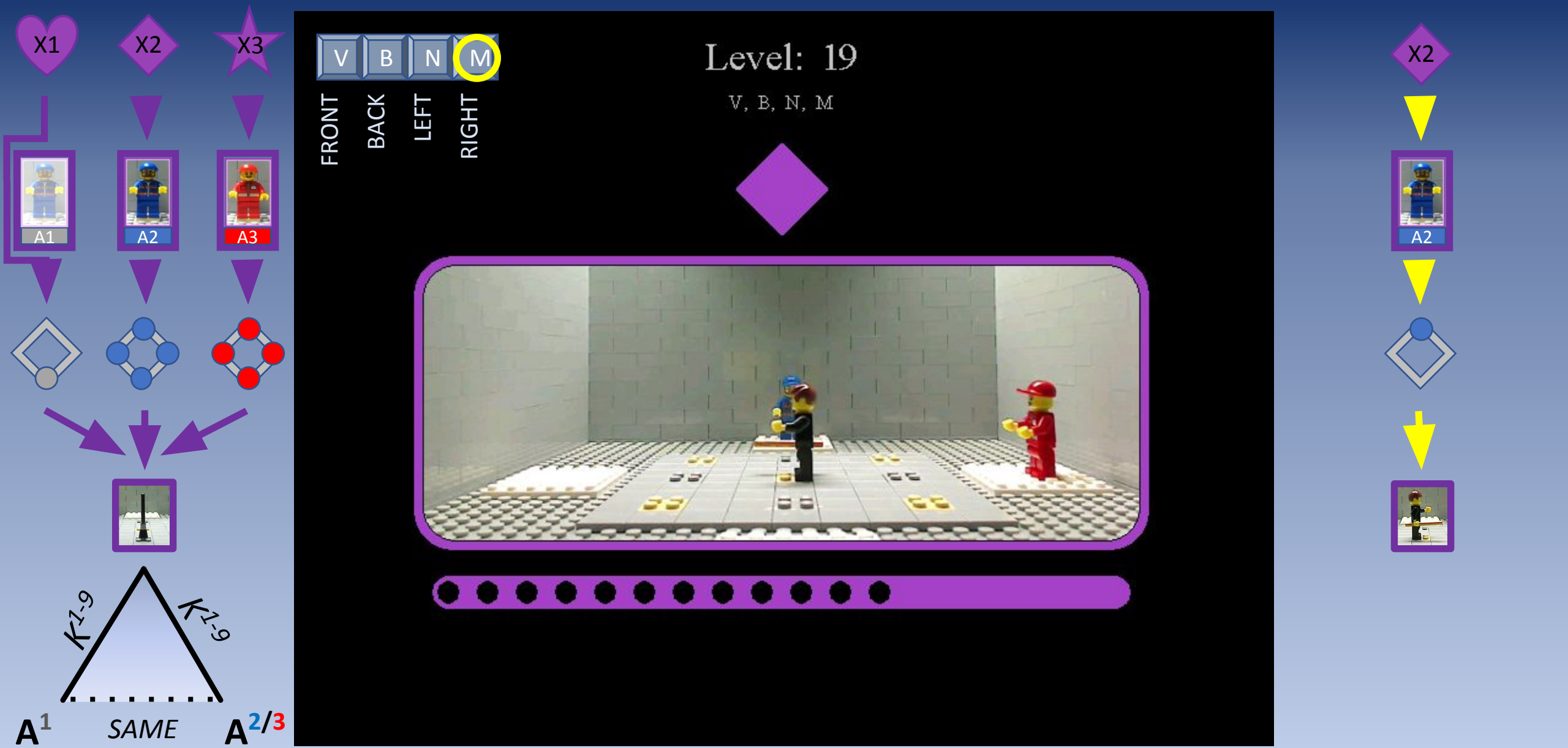
Which side of the black figure is facing you?



Study Phase 2: Train relative deictic orienting


X1
X2
X3
A1
A2
A3
K1-9
K1-9
A1
SAME
A2/3

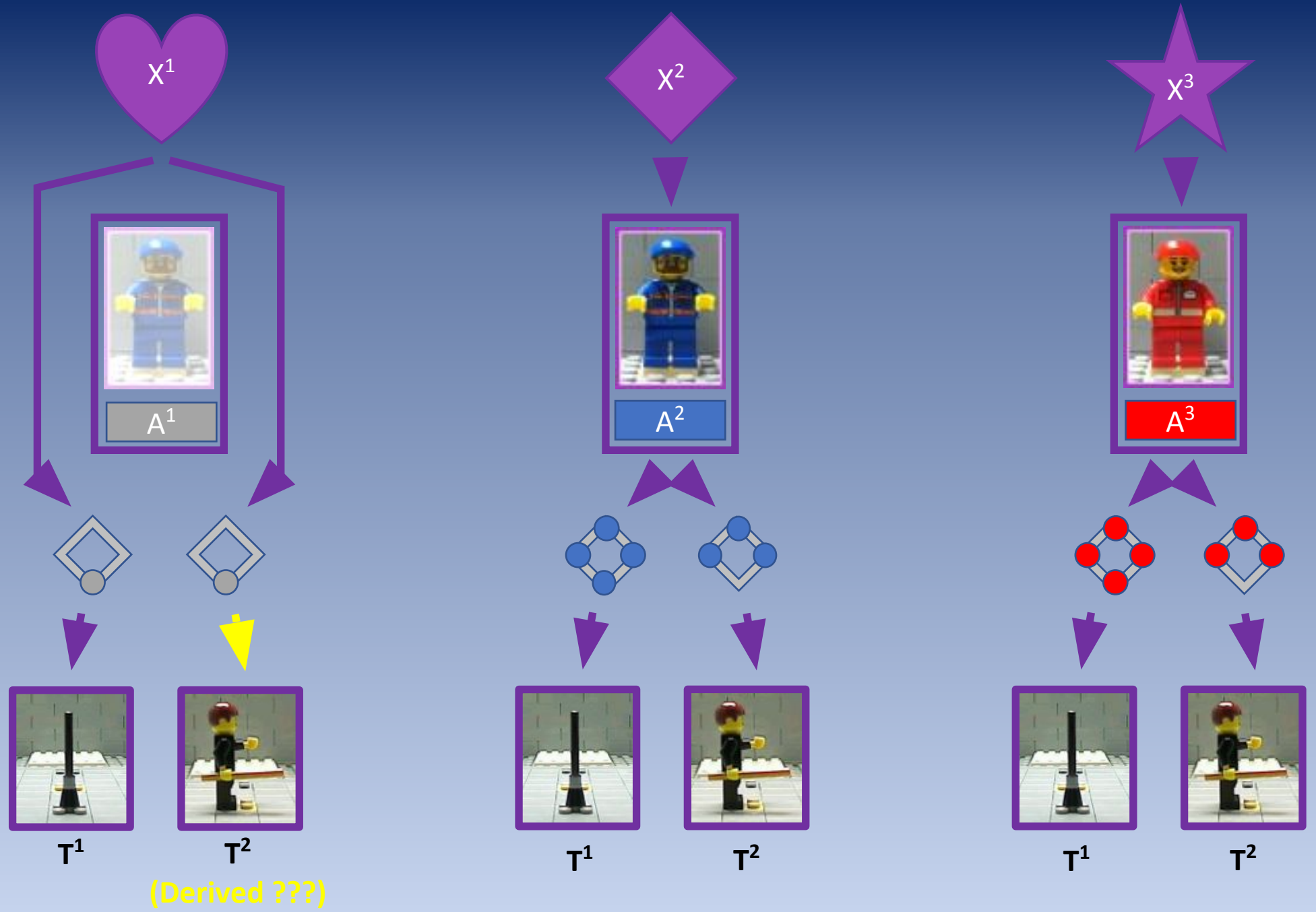

Level: 19
V, B, N, M


X1
X2
X3
A1
A2
A3
V
B
N
M
FRONT
BACK
LEFT
RIGHT
Level: 19
V, B, N, M
X2
A2
K1-9
K1-9
A1
SAME
A2/3


X1
X2
X3
A1
A2
A3
V
B
N
M
FRONT
BACK
LEFT
RIGHT
Level: 19
V, B, N, M
X2
X3
A2
A3
K1-9
K1-9
A1
SAME
A2/3


X1
X2
X3
A1
A2
A3
V
B
N
M
FRONT
BACK
LEFT
RIGHT
Level: 19
V, B, N, M
X2
X3
A2
A3
K1-9
K1-9
A1
SAME
A2/3


X1
X2
X3
A1
A2
A3
V
B
N
M
FRONT
BACK
LEFT
RIGHT
Level: 19
V, B, N, M
K1-9
K1-9
A1
SAME
A2/3
X2
X3
A2
A3
KVBNM
A2/3


X1
A1
X2
A2
X3
A3
T1
T2
T1
T2
T1
T2
(Derived ???)

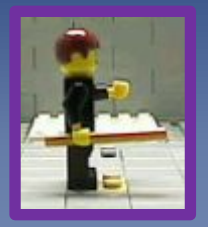
T^1

$K^{1\text{-}9}$

$K^{1\text{-}9}$

A^1

$A^{2/3}$



T^2

K^{VBNM}

A^1

$A^{2/3}$

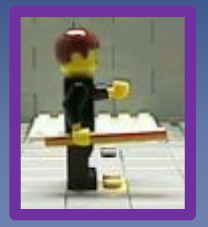
T^1

$K^{1\text{-}9}$

$K^{1\text{-}9}$

A^1

$A^{2/3}$



T^2

???

K^{VBNM}

A^1

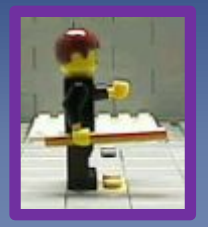
$A^{2/3}$

T^1

$K^{1\text{-}9}$

$K^{1\text{-}9}$

A^1 *SAME* $A^{2/3}$



T^2

???

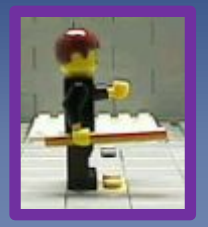
K^{VBNM}

A^1 $A^{2/3}$

T^1

$K^{1\text{-}9}$ $K^{1\text{-}9}$

A^1 *SAME* $A^{2/3}$



T^2

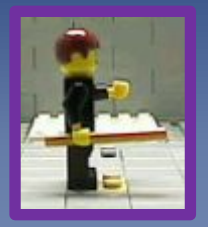
??? K^{VBNM}

A^1 *SAME* $A^{2/3}$

T^1

$K^{1\text{-}9}$ $K^{1\text{-}9}$

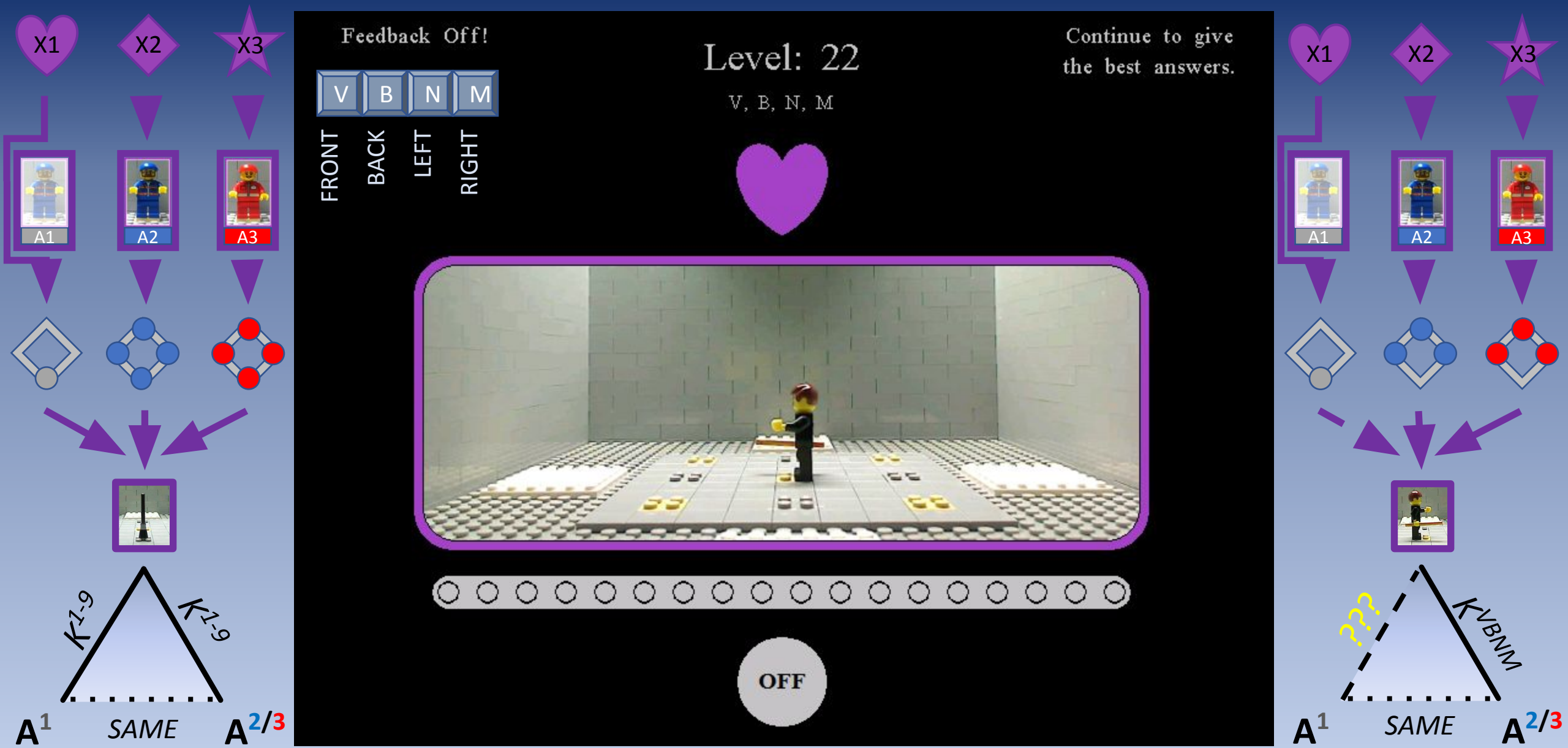
A^1 *SAME* $A^{2/3}$

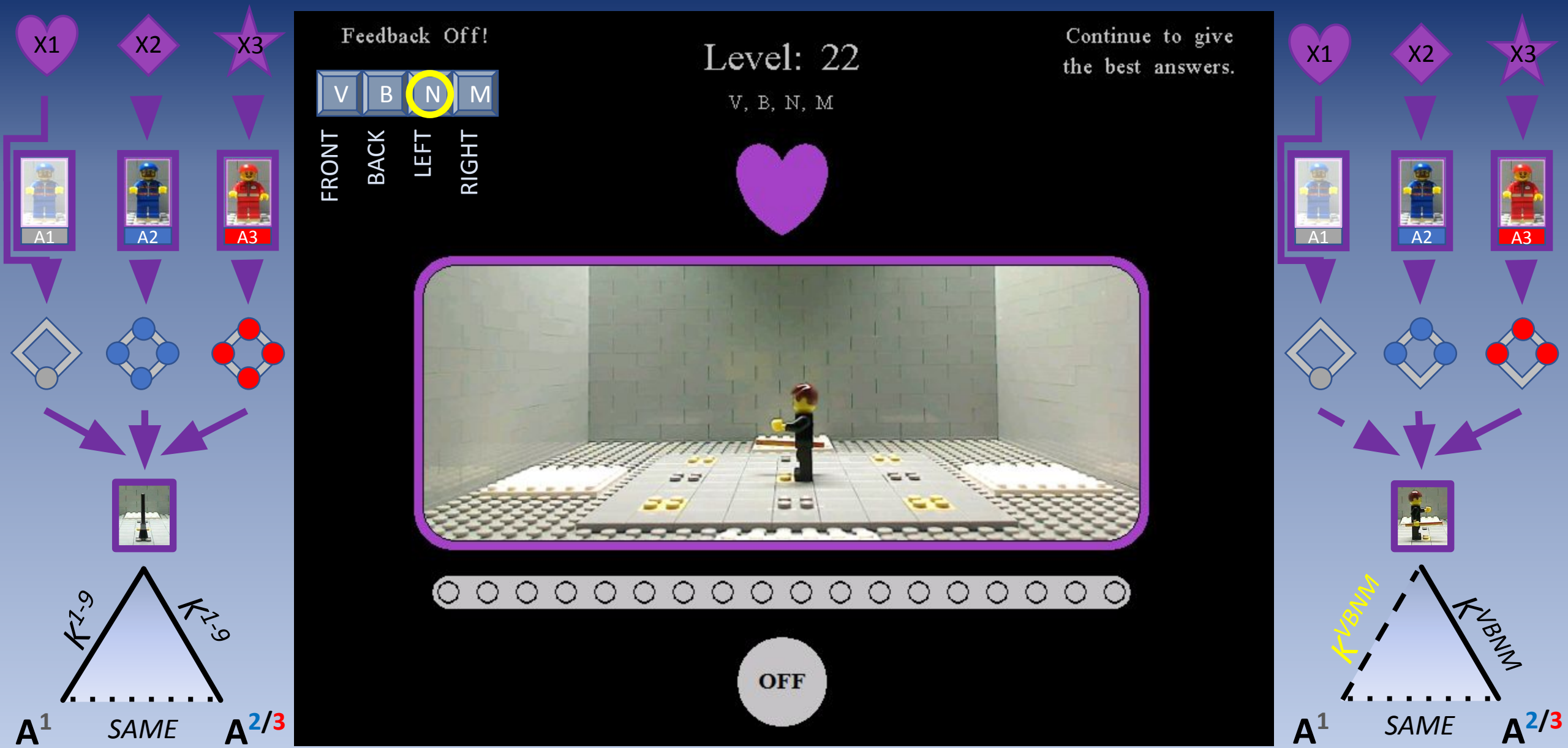


T^2

K^{VBNM} K^{VBNM}

A^1 *SAME* $A^{2/3}$


X1
X2
X3
A1
A2
A3
Feedback Off!
V
B
N
M
FRONT
BACK
LEFT
RIGHT
Level: 22
V, B, N, M
Continue to give the best answers.
OFF
K1-9
K1-9
A1
SAME
A2/3
???
KVBNM
A1
SAME
A2/3


X1
X2
X3
A1
A2
A3
Feedback Off!
V
B
N
M
FRONT
BACK
LEFT
RIGHT
Level: 22
V, B, N, M
Continue to give the best answers.
OFF
K1-9
K1-9
A1
SAME
A2/3
KVBNM
KVBNM
A1
SAME
A2/3

Results

	P1	P2	P3	P4	P5
Minutes to Complete	**33.82**	**(29.16)**	**33.94**	**18.04**	**16.60**

Results

	P1	P2	P3	P4	P5
Minutes to Complete	**33.82**	**(29.16)**	**33.94**	**18.04**	**16.60**
Training Correct/Incorrect Trials	**306/35**	**N/A**	**281/23**	**255/10**	**255/15**

Results

	P1	P2	P3	P4	P5
Minutes to Complete	**33.82**	**(29.16)**	**33.94**	**18.04**	**16.60**
Training Correct/Incorrect Trials	**306/35**	**N/A**	**281/23**	**255/10**	**255/15**
Testing Correct/Incorrect Trials	**8/0****	**N/A**	**7/1***	**7/1***	**8/0****

** $p < .0001$

* $P < .001$

Results

	P1	P2	P3	P4	P5
Minutes to Complete	**33.82**	**(29.16)**	**33.94**	**18.04**	**16.60**
Training Correct/Incorrect Trials	**306/35**	**N/A**	**281/23**	**255/10**	**255/15**
Testing Correct/Incorrect Trials	**8/0****	**N/A**	**7/1***	**7/1***	**8/0****

** p <.0001

* P < .001

Montréal
CANADA
ACBS Annual
World Conference 16
July 24-29, 2018

CEU's ?

Sign In
Sign Out
Hokie Pokie

Contact:
Dr. Paul Guinther
drpaulguinther@gmail.com

Future Directions

- Demonstrate derived modeling of material perspective.
  - Across *coordinated* vs. *opposite* interpersonal alignments
    - “Modeling” vs. “Reverse Modeling”
- Expand procedures to induce derived modeling in developing children.
- Use relational triangulation framework to enhance client modeling of therapist behavior.

Social Modeling
(Bandura, 1977)

- **Copying the behavior of those with whom you *identify*.**
  - **Observational Learning**
    - The behavior of another has been observed, but its copied emission hasn't been directly reinforced for the self.
  - **Vicarious Reinforcement**
    - Whether the behavior is copied depends on consequences delivered to the model for the model's behavior.

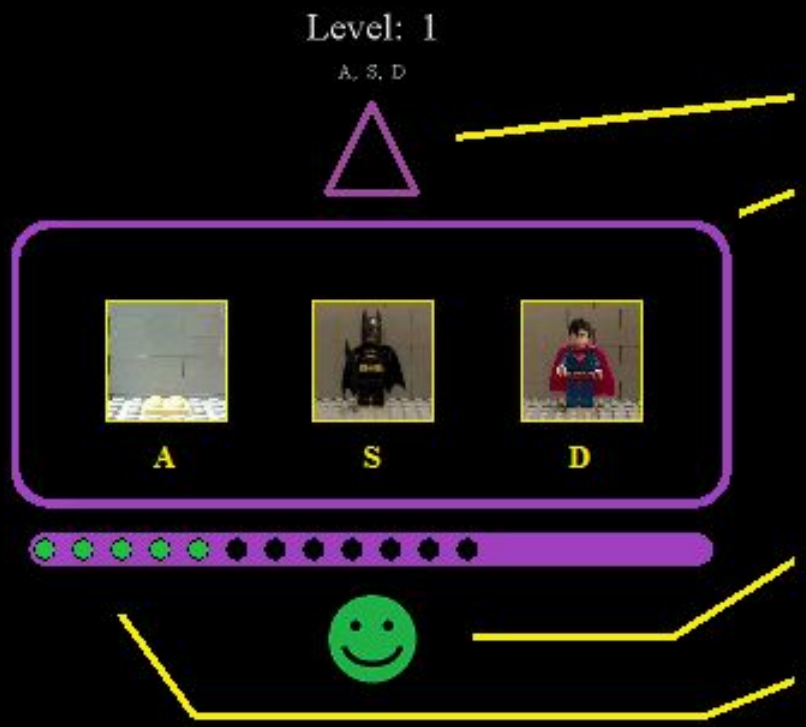
Derived Modeling
(Guinther, 2017; Now)

- **Transposing another's perspective on to the self based on *alignment*.**
  - **Derivation**
    - The behavior of another is a relatum, but its transposed emission hasn't been directly reinforced for the self.
  - **Virtual Reinforcement**
    - How the behavior is transposed depends on the historical context-dependent pattern of consequences delivered to the self while perspective taking.

Welcome to the Experiment!

For each of the following trial-and-error problems, you will be shown a shape and a scene, and then you will make a response by pressing a key on the keyboard. You will be shown a happy face if you make a correct selection or you will be shown a sad face if you make an incorrect selection. Use the feedback to learn how to get the problems right on a consistent basis.

You will need to pay attention to the shape *and* the scene *and* the feedback to figure out how to solve the problems.



1) Note which shape appears, and wait for it to fill…

2) Pay attention to the scene, which will also change across trials.

3) Press A, S, or D (New keys will become available at higher levels)
   To pick the figure on the left, press **A**
   To pick the figure in the middle, press **S**
   To pick the figure on the right, press **D**

4) Learn from the feedback: correct wrong

5) Fill the scoreboard with points to reach the next level.

6) Press the space bar to load the next trial.

Please ask the experimenter if you have any questions; press the space bar to begin.