Screenshots

1 Experiment A, Updating

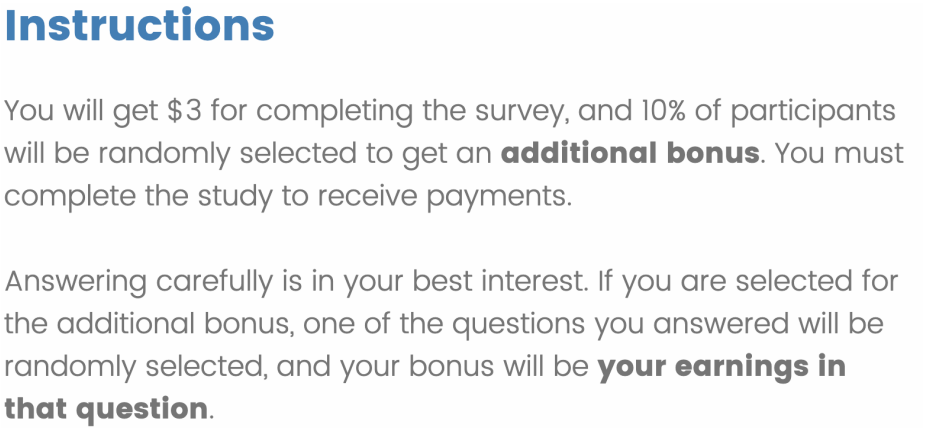


Figure Screenshots-A.1: Instructions page 1.

Instructions (continued)

Please **read these instructions carefully**. There will be a **short quiz** at the end.

You will face **7** different scenarios. In each scenario, the computer has created a (virtual) bag with **Green** or **Purple** balls and has **randomly drawn one ball** from the bag.

Each scenario gives you some information about the composition of the bag. For example:

> A bag contains **50 Green** balls and **50 Purple** balls.

In some cases, you also receive information on the drawn ball. For example:

> A bag contains:
>
> - **50 Green** balls and **50 Purple** balls.
> - **1/2** of **Green** balls are marked with an **X**
> - **1/2** of **Purple** balls are marked with an **X**
>
> A ball has been drawn from the bag. The computer informs you that this ball is **marked with an X**.

The bag is **different** in each scenario, so read carefully.

Figure Screenshots-A.2: Instructions page 2, main treatment.

Instructions (continued)

Please **read these instructions carefully**. There will be a **short quiz** at the end.

You will face **7** different scenarios. In each scenario, the computer has created a (virtual) bag with **Green** or **Purple** balls and has **randomly drawn one ball** from the bag.

Each scenario gives you some information about the composition of the bag. For example:

> A bag contains **50 Green** balls and **50 Purple** balls.

In some cases, you are told how the bag was constructed using an initial stock of **Green** and **Purple** balls. For example:

> There is a stock of **50 Green** balls and **50 Purple** balls available. A bag was constructed as follows:
>
> - **1/2** of the **Green** balls were put in the bag
> - **1/2** of the **Purple** balls were put in the bag

The bag is **different** in each scenario, so read carefully.

Figure Screenshots-A.3: Instructions page 2, mirror treatment.

Instructions (continued)

In some scenarios, you are asked to choose between a fixed amount of money received for sure or winning **$30** if the drawn ball is **Purple**.

For example, you might be asked to choose between:

$30 if drawn ball is **Purple** ○ ○ **$15** for sure

- If you select the left option, you win **$30 if the drawn ball is Purple and $0 otherwise**.
- If you select the right option, you win **$15 for sure, regardless of the color of the drawn ball**.

You must answer a list of questions like this. For example:

$30 if drawn ball is **Purple** ○ ○ **$11** for sure
$30 if drawn ball is **Purple** ○ ○ **$12** for sure
$30 if drawn ball is **Purple** ○ ○ **$13** for sure
$30 if drawn ball is **Purple** ○ ○ **$14** for sure
$30 if drawn ball is **Purple** ○ ○ **$15** for sure

The option on the left does not change, while the option on the right **gets better as you go down the list**.

You must make **a choice in all rows**, but for simplicity, you only have to **click once** on the row where you want to **switch from left to right**. You can modify your choice as many times as you want, and you can also select only the left or only the right.

Intuitively, you can think about how much you'd pay for the bet. Then, you switch to the sure amount as soon as it is above the amount you'd pay for the bet.

Below is an example for you to experience the interface (try to click).

$30 if drawn ball is **Purple** ○ ○ **$0** for sure
$30 if drawn ball is **Purple** ○ ○ **$7** for sure
$30 if drawn ball is **Purple** ○ ○ **$12** for sure
$30 if drawn ball is **Purple** ○ ○ **$18** for sure
$30 if drawn ball is **Purple** ○ ○ **$20** for sure

Figure Screenshots-A.4: Instructions page 3.

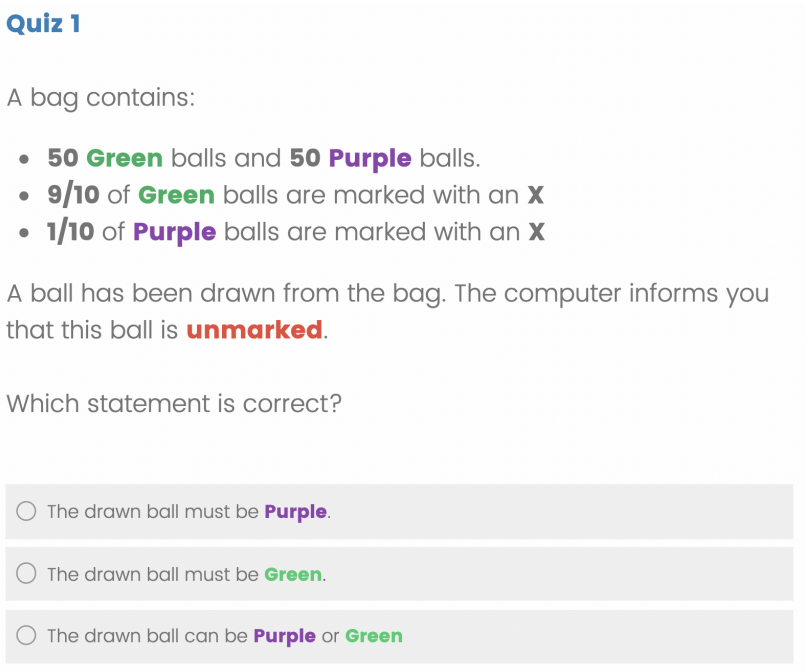


Figure Screenshots-A.5: Quiz question 1, main treatment.

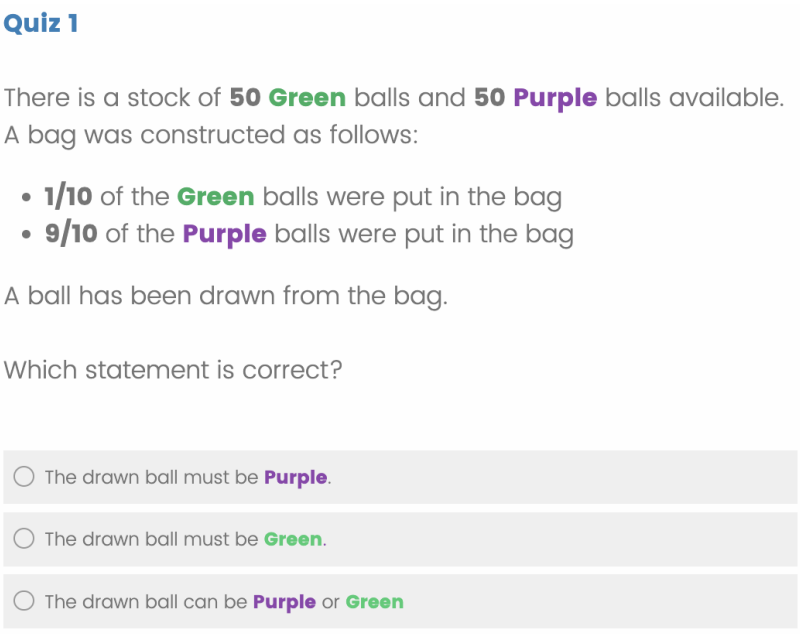


Figure Screenshots-A.6: Quiz question 1, mirror treatment.

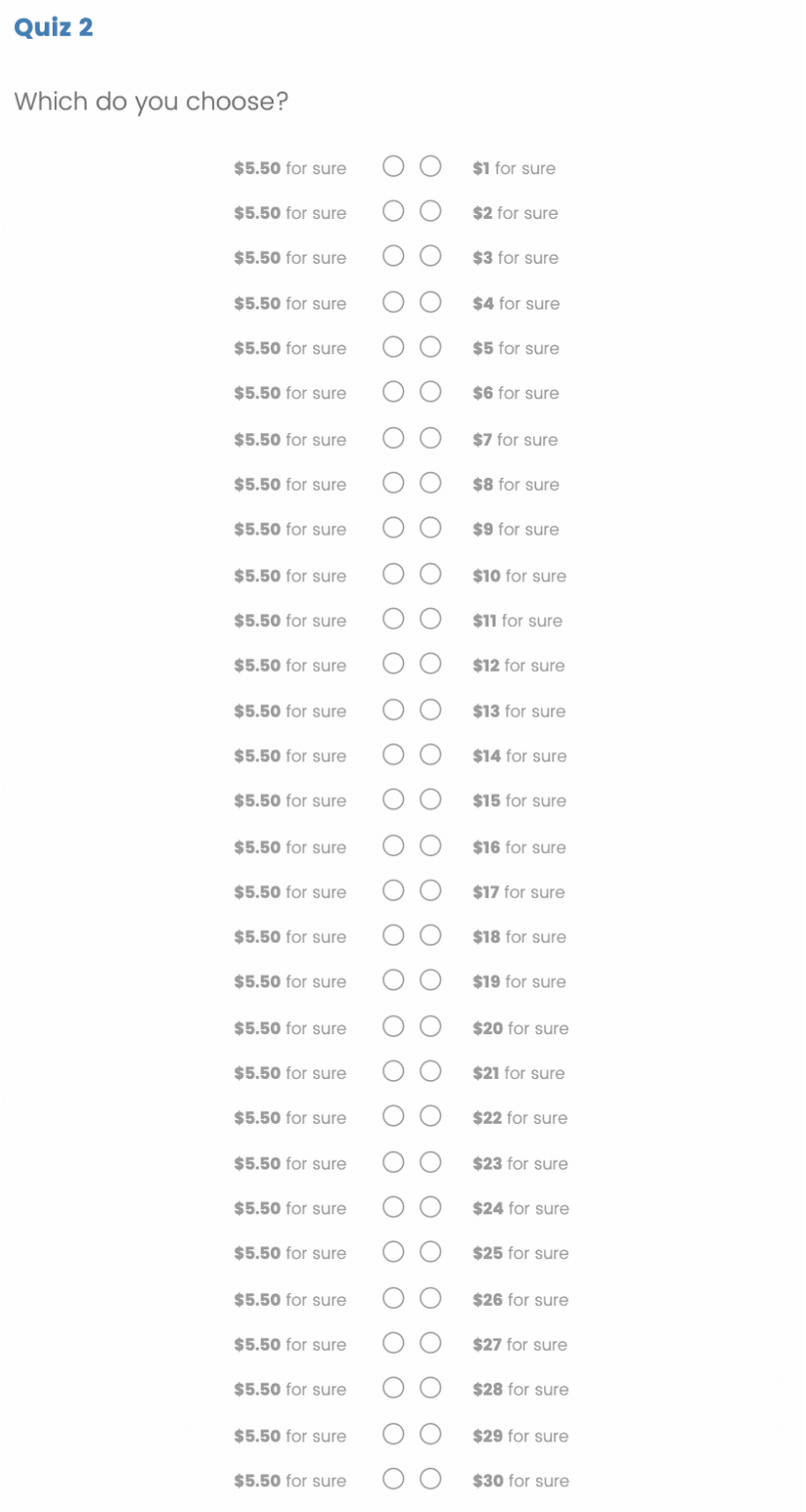


Figure Screenshots-A.7: Quiz question 2.

A bag contains **25 Purple** balls and **25 Green** balls.

A ball has been drawn from the bag.

Which do you choose?

Figure Screenshots-A.8: Risk question 1.

$30 if drawn ball is **Purple**	○ ○	**$1** for sure
$30 if drawn ball is **Purple**	○ ○	**$2** for sure
$30 if drawn ball is **Purple**	○ ○	**$3** for sure
$30 if drawn ball is **Purple**	○ ○	**$4** for sure
$30 if drawn ball is **Purple**	○ ○	**$5** for sure
$30 if drawn ball is **Purple**	○ ○	**$6** for sure
$30 if drawn ball is **Purple**	○ ○	**$7** for sure
$30 if drawn ball is **Purple**	○ ○	**$8** for sure
$30 if drawn ball is **Purple**	○ ○	**$9** for sure
$30 if drawn ball is **Purple**	○ ○	**$10** for sure
$30 if drawn ball is **Purple**	○ ○	**$11** for sure
$30 if drawn ball is **Purple**	○ ○	**$12** for sure
$30 if drawn ball is **Purple**	○ ○	**$13** for sure
$30 if drawn ball is **Purple**	○ ○	**$14** for sure
$30 if drawn ball is **Purple**	○ ○	**$15** for sure
$30 if drawn ball is **Purple**	○ ○	**$16** for sure
$30 if drawn ball is **Purple**	○ ○	**$17** for sure
$30 if drawn ball is **Purple**	○ ○	**$18** for sure
$30 if drawn ball is **Purple**	○ ○	**$19** for sure
$30 if drawn ball is **Purple**	○ ○	**$20** for sure
$30 if drawn ball is **Purple**	○ ○	**$21** for sure
$30 if drawn ball is **Purple**	○ ○	**$22** for sure
$30 if drawn ball is **Purple**	○ ○	**$23** for sure
$30 if drawn ball is **Purple**	○ ○	**$24** for sure
$30 if drawn ball is **Purple**	○ ○	**$25** for sure
$30 if drawn ball is **Purple**	○ ○	**$26** for sure
$30 if drawn ball is **Purple**	○ ○	**$27** for sure
$30 if drawn ball is **Purple**	○ ○	**$28** for sure
$30 if drawn ball is **Purple**	○ ○	**$29** for sure
$30 if drawn ball is **Purple**	○ ○	**$30** for sure

Figure Screenshots-A.9: MPL.

A bag contains:

- **30 Green** balls and **20 Purple** balls.
- **1/3** of the **Green** balls are marked with an **X**
- **1/2** of the **Purple** balls are marked with an **X**

A ball has been drawn from the bag. The computer informs you that this ball is **marked with an X**.

Which do you choose?

Figure Screenshots-A.10: Main task, main treatment.

In the previous screen, you faced the following scenario:

A bag contains:

- **30 Green** balls and **20 Purple** balls.
- **1/3** of the **Green** balls are marked with an **X**
- **1/2** of the **Purple** balls are marked with an **X**

A ball has been drawn from the bag. The computer informs you that this ball is **marked with an X**.

Using the laws of probability, it is possible to calculate the **Exact Chance** that the drawn ball is **Purple**. What is this **Exact Chance**? (in %)

[You can earn a $5 bonus with your guess. Your probability of winning goes up the more accurate your answer is, using the formula explained here.]

%

Figure Screenshots-A.11: Main task with binary scoring rule, main treatment.

How certain are you that your answer above is the **Exact Chance** that the drawn ball is **Purple**, calculated using the laws of probability?

Very uncertain — Completely certain

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Figure Screenshots-A.12: Cognitive uncertainty.

There is a stock of **30 Green** balls and **20 Purple** balls available. A bag was constructed as follows:

- **1/3** of the **Green** balls were put in the bag
- **1/2** of the **Purple** balls were put in the bag

A ball has been drawn from the bag.

Which do you choose?

Figure Screenshots-A.13: Main task, mirror treatment.

In the previous screen, you faced the following scenario:

There is a stock of **30 Green** balls and **20 Purple** balls available. A bag was constructed as follows:

- **1/3** of the **Green** balls were put in the bag
- **1/2** of the **Purple** balls were put in the bag

A ball has been drawn from the bag.

Using the laws of probability, it is possible to calculate the **Exact Chance** that the drawn ball is **Purple**. What is this **Exact Chance**? (in %)

[You can earn a $5 bonus with your guess. Your probability of winning goes up the more accurate your answer is, using the formula explained here.]

%

Figure Screenshots-A.14: Main task with binary scoring rule, mirror treatment.

A bag contains:

- **20 Green** balls and **30 Purple** balls.
- **1/2** of the **Green** balls are marked with an **X**
- **1/3** of the **Purple** balls are marked with an **X**

A ball has been drawn from the bag. The computer informs you that this ball is **marked with an X**.

Which do you choose?

Figure Screenshots-A.15: Complement task, main treatment.

In the previous screen, you faced the following scenario:

A bag contains:

- **20 Green** balls and **30 Purple** balls.
- **1/2** of the **Green** balls are marked with an **X**
- **1/3** of the **Purple** balls are marked with an **X**

A ball has been drawn from the bag. The computer informs you that this ball is **marked with an X**.

Using the laws of probability, it is possible to calculate the **Exact Chance** that the drawn ball is **Purple**. What is this **Exact Chance**? (in %)

[You can earn a $5 bonus with your guess. Your probability of winning goes up the more accurate your answer is, using the formula explained here.]

%

Figure Screenshots-A.16: Complement task with binary scoring rule, main treatment.

There is a stock of **20 Green** balls and **30 Purple** balls available.
A bag was constructed as follows:

- **1/2** of the **Green** balls were put in the bag
- **1/3** of the **Purple** balls were put in the bag

A ball has been drawn from the bag.

Which do you choose?

Figure Screenshots-A.17: Complement task, mirror treatment.

In the previous screen, you faced the following scenario:

There is a stock of **20 Green** balls and **30 Purple** balls available.
A bag was constructed as follows:

- **1/2** of the **Green** balls were put in the bag
- **1/3** of the **Purple** balls were put in the bag

A ball has been drawn from the bag.

Using the laws of probability, it is possible to calculate the **Exact Chance** that the drawn ball is **Purple**. What is this **Exact Chance**? (in %)

[You can earn a $5 bonus with your guess. Your probability of winning goes up the more accurate your answer is, using the formula explained here.]

%

Figure Screenshots-A.18: Complement task with binarized scoring rule, mirror treatment.

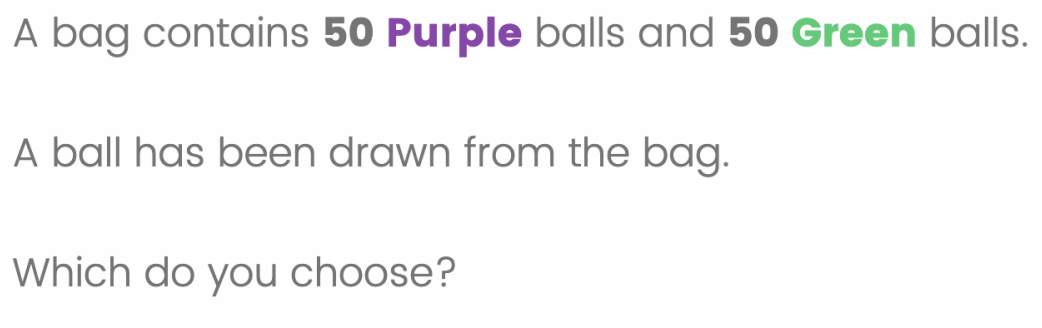


Figure Screenshots-A.19: Risk question 2.

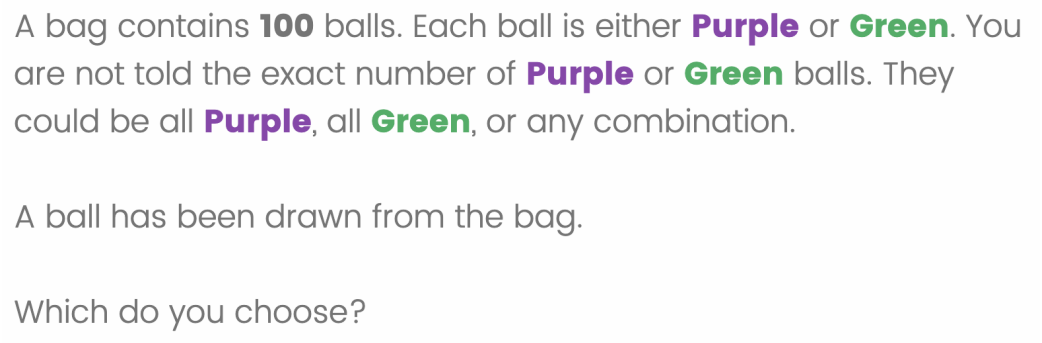


Figure Screenshots-A.20: Ambiguity question.

2 Experiment B, Perception

Instructions

You will get $3 for completing the survey, and 10% of participants will be randomly selected to get an **additional bonus**. You must complete the study to receive payments.

Answering carefully is in your best interest. If you are selected for the additional bonus, one of the questions you answered will be randomly selected, and your bonus will be **your earnings in that question**.

Figure Screenshots-B.21: Instructions page 1.

Instructions (continued)

The experiment is comprised of **4 Parts**.

Please **read these instructions carefully**. There will be a **short quiz at the end**.

In Part 1, you will face **5** different scenarios. In each scenario, the computer has created a (virtual) bag with **Green** or **Purple** balls and has **randomly drawn one ball** from the bag.

Each scenario gives you some information about the composition of the bag. For example:

A bag contains **50 Green** balls and **50 Purple** balls.

The bag is **different** in each scenario, so read carefully.

Figure Screenshots-B.22: Instructions page 2.

Instructions (continued)

In each scenario, you are asked to choose between a fixed amount of money received for sure or winning **$30** if the drawn ball is **Purple**.

For example, you might be asked to choose between:

$30 if drawn ball is **Purple** ○ ○ **$15** for sure

- If you select the left option, you win **$30 if the drawn ball is Purple and $0 otherwise**.
- If you select the right option, you win **$15 for sure, regardless of the color of the drawn ball**.

You must answer a list of questions like this. For example:

$30 if drawn ball is **Purple**	○ ○	**$11** for sure
$30 if drawn ball is **Purple**	○ ○	**$12** for sure
$30 if drawn ball is **Purple**	○ ○	**$13** for sure
$30 if drawn ball is **Purple**	○ ○	**$14** for sure
$30 if drawn ball is **Purple**	○ ○	**$15** for sure

The option on the left does not change, while the option on the right **gets better as you go down the list**.

You must make **a choice in all rows**, but for simplicity, you only have to **click once** on the row where you want to **switch from left to right**. You can modify your choice as many times as you want, and you can also select only the left or only the right.

Intuitively, you can think about how much you'd pay for the bet. Then, you switch to the sure amount as soon as it is above the amount you'd pay for the bet.

Below is an example for you to experience the interface (try to click).

$30 if drawn ball is **Purple**	○ ○	**$0** for sure
$30 if drawn ball is **Purple**	○ ○	**$7** for sure
$30 if drawn ball is **Purple**	○ ○	**$12** for sure
$30 if drawn ball is **Purple**	○ ○	**$18** for sure
$30 if drawn ball is **Purple**	○ ○	**$20** for sure

Figure Screenshots-B.23: Instructions page 3.

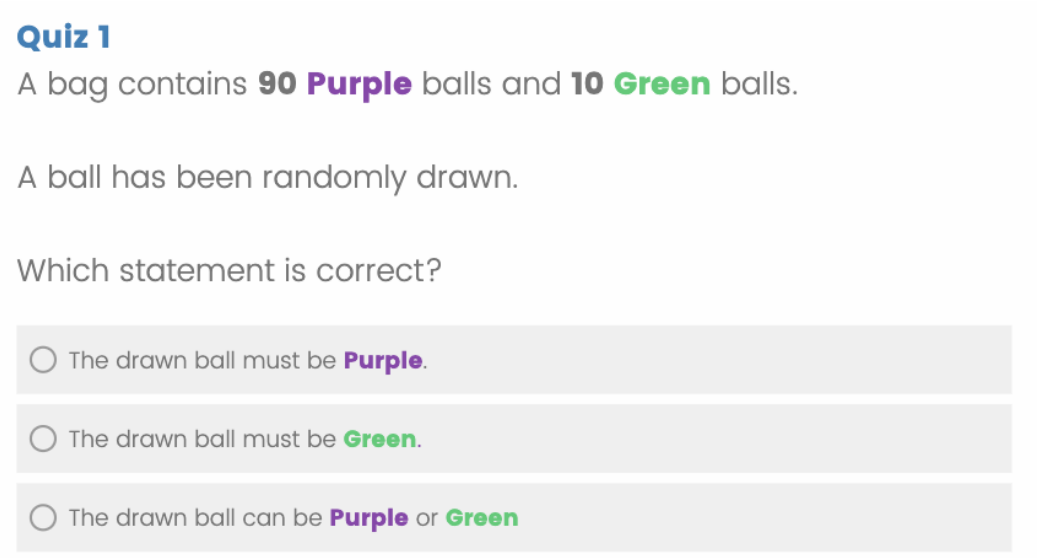


Figure Screenshots-B.24: Quiz question 1.

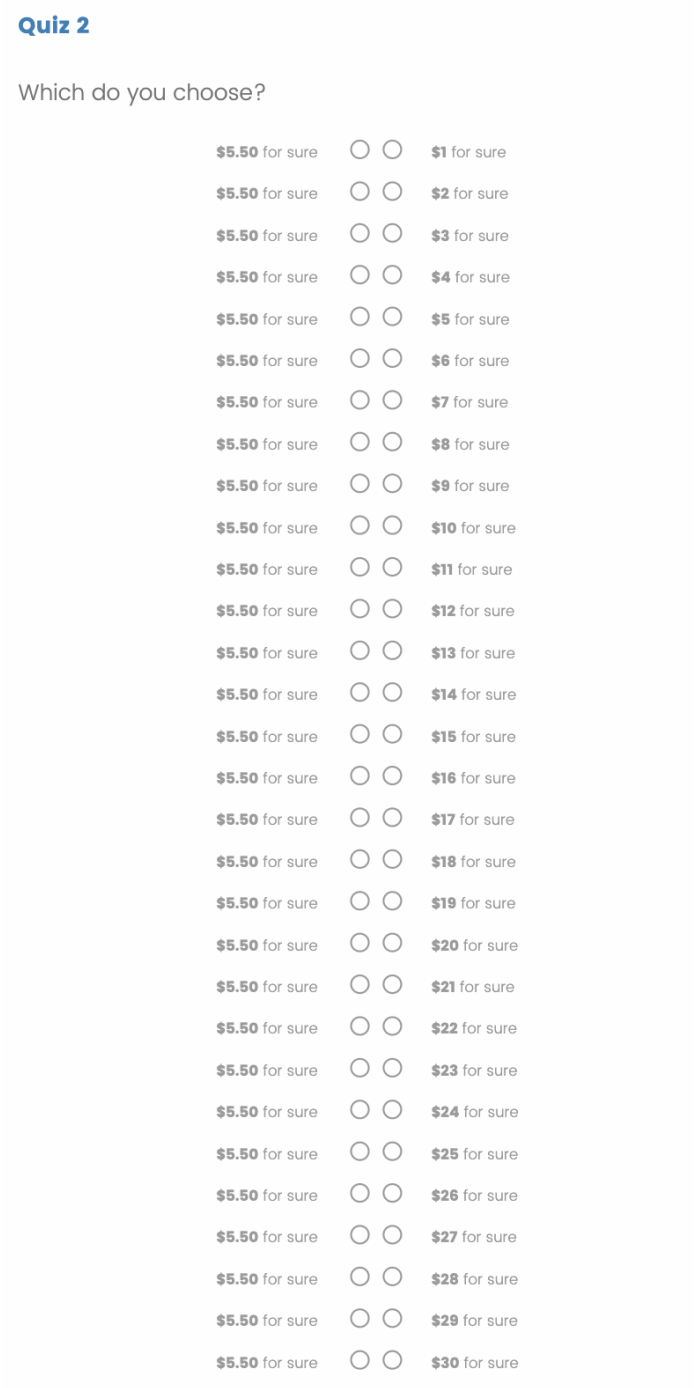


Figure Screenshots-B.25: Quiz question 2.

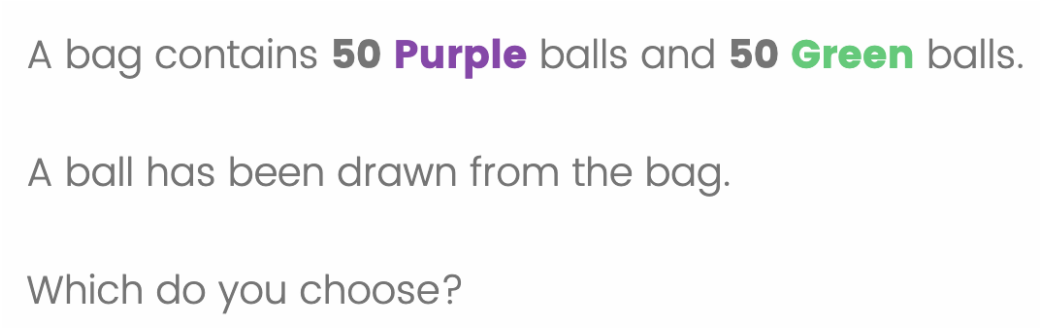


Figure Screenshots-B.26: Risk question 1.

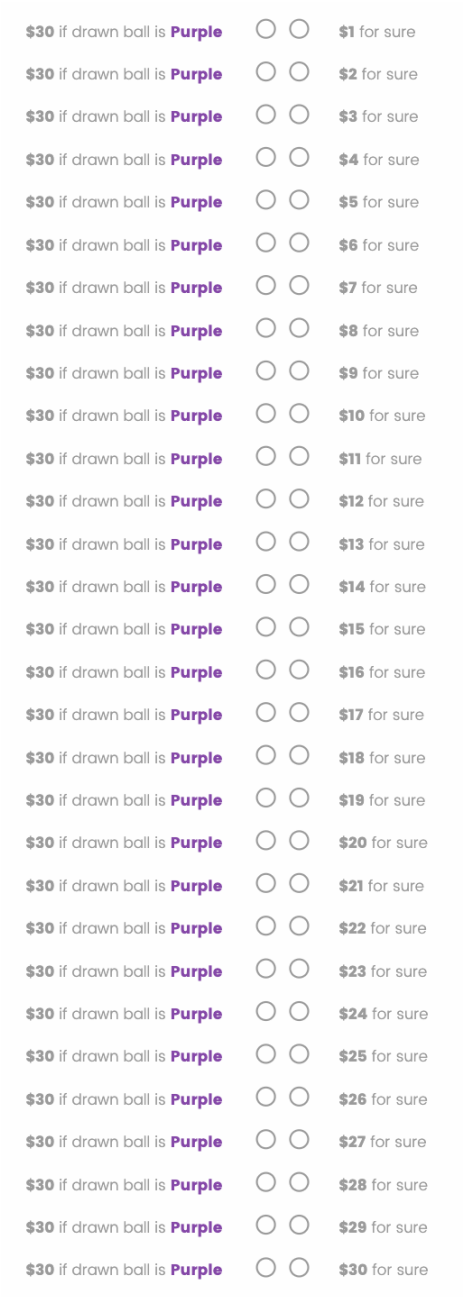


Figure Screenshots-B.27: MPL for risk questions.

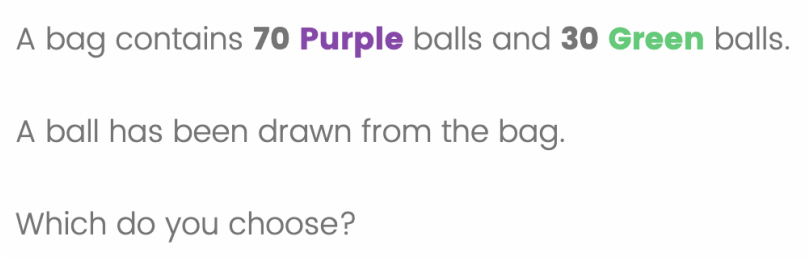


Figure Screenshots-B.28: Risk question 2.

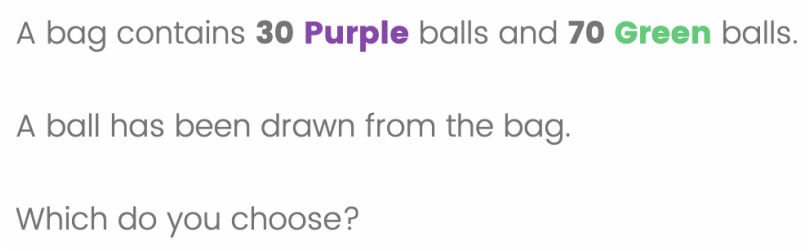


Figure Screenshots-B.29: Risk question 4.

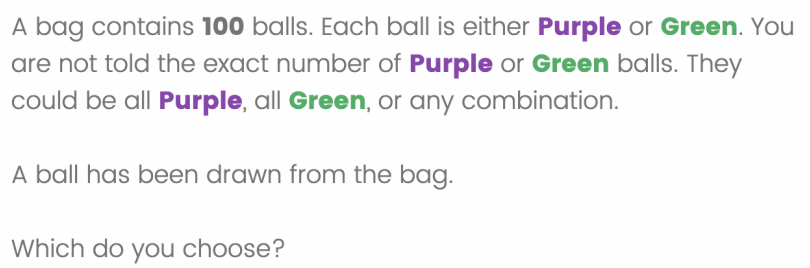
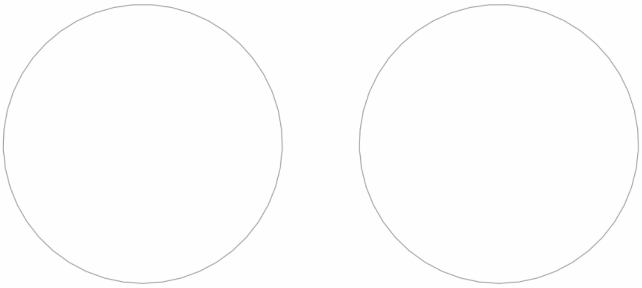


Figure Screenshots-B.30: Ambiguity question.

Part 2: Instructions

In Part 2, you will face 4 different scenarios. In each scenario, you will first see two empty circles, like these.



After a brief wait, the circle on the left will be populated with some dots, like this.

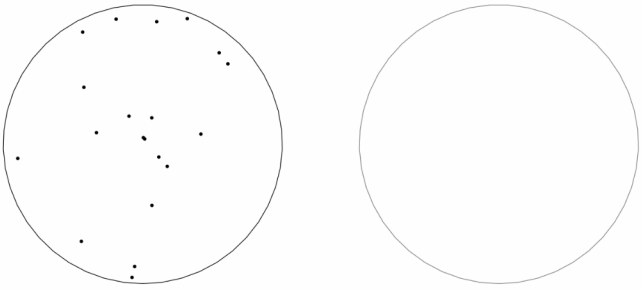


Figure Screenshots-B.31: Instructions page 4.

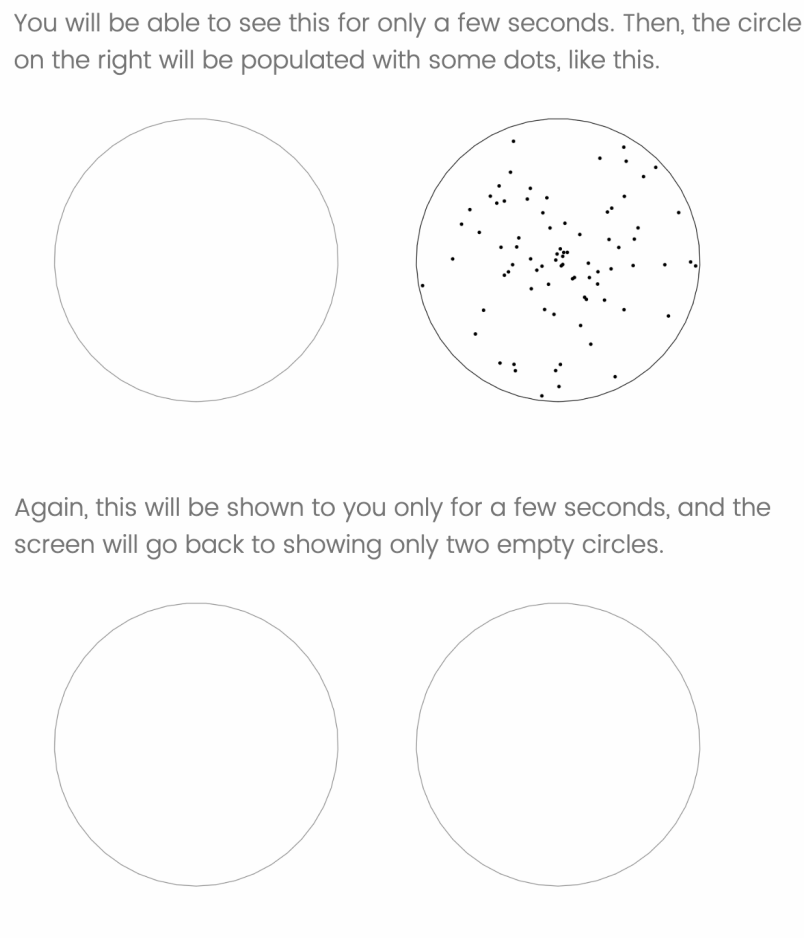


Figure Screenshots-B.32: Instructions page 5.

First, you are asked to report **which circle has more dots**: the one on the left or the one on the right. Sometimes, the choice will be easy. Other times, it will be harder.

Next, you are asked to choose between winning **$30 if you made the correct choice** and a **fixed amount of money**. For example, you may see:

Like before, you choose between a bet and a sure amount, though the bet is different:

- If you select "$30 if your choice is correct", you win **$30 if the circle you selected was the one with more dots and $0 otherwise**.
- If you select "$15 for sure", you win **$15 for sure, regardless of whether you made the right choice**.

As in Part 1, you will see a list of questions like this, and you only need to click once.

Again, you can think about how much you'd pay for the bet that you have made the right choice. Then, you switch to the sure amount as soon as it is above the amount you'd pay for the bet.

Please note:

- The circles with dots will appear soon after the question, so pay attention!
- The circles are different in every question, and whether the circle with more dots is on the left or right is randomly determined.
- The amount of time each circle is shown may vary.

Next, you will see a practice question to familiarize yourself with the interface.

Figure Screenshots-B.33: Instructions page 6.

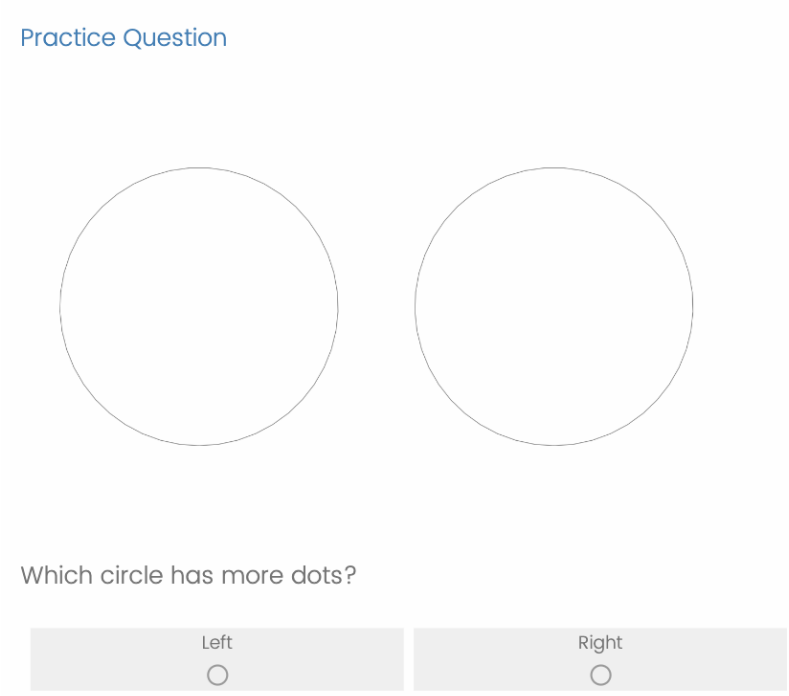


Figure Screenshots-B.34: Practice question.

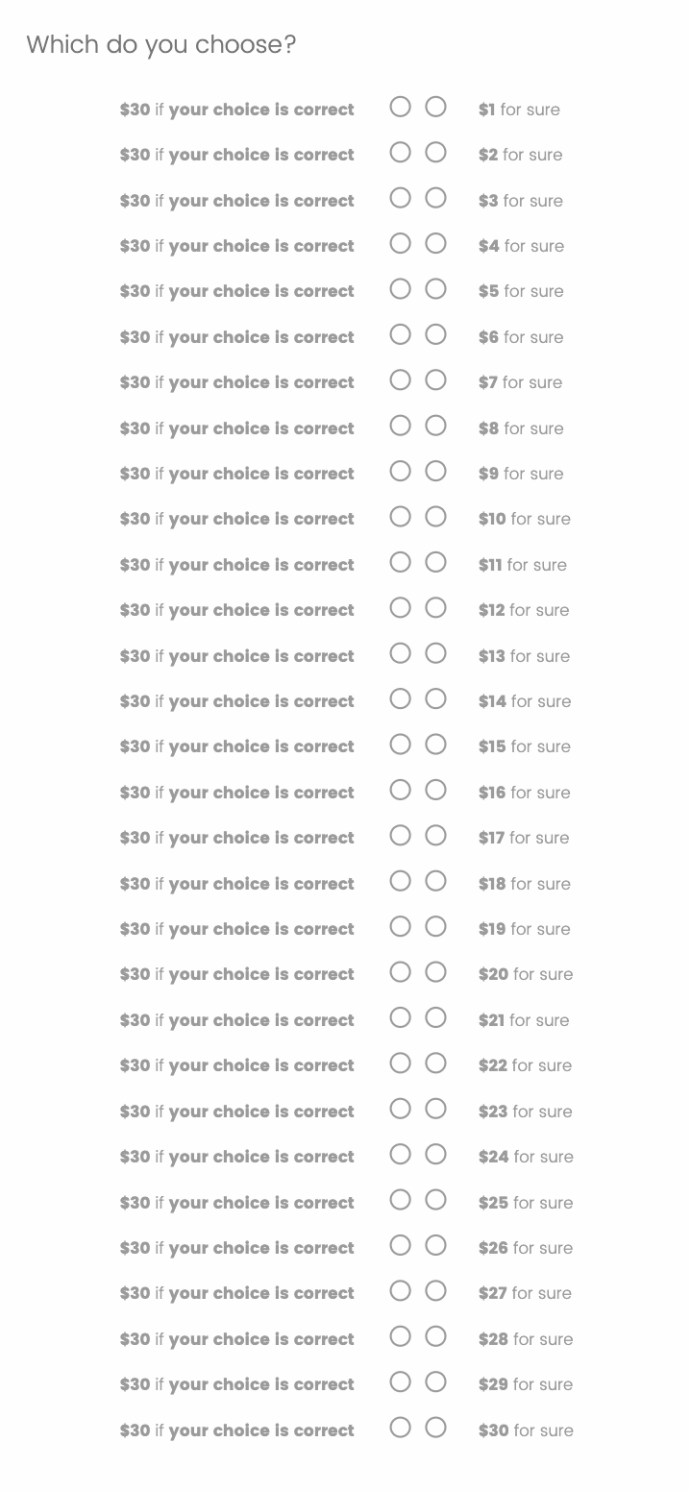


Figure Screenshots-B.35: MPL for perception task.

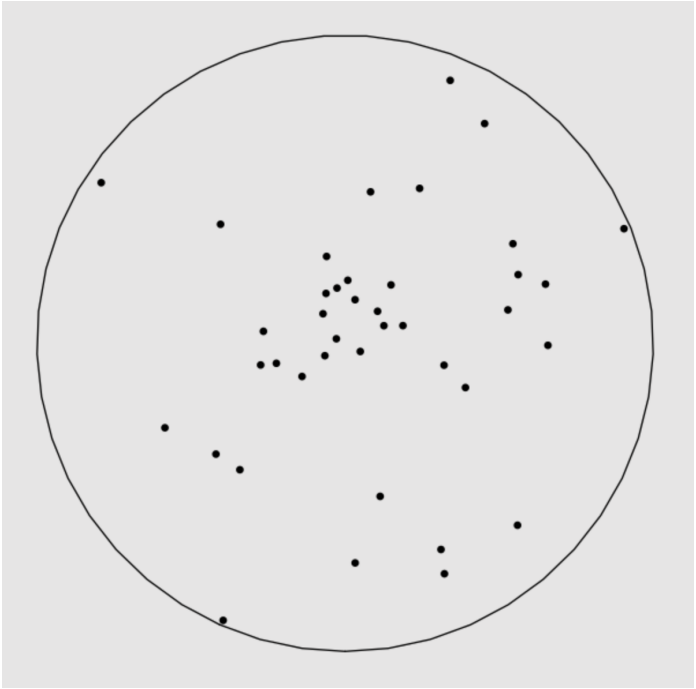


Figure Screenshots-B.36: Easy task, correct answer.

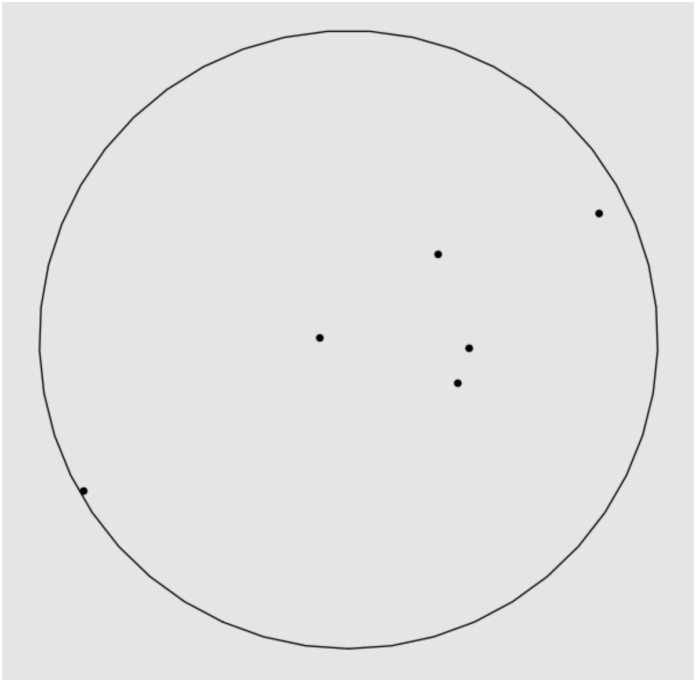


Figure Screenshots-B.37: Easy task, wrong answer.

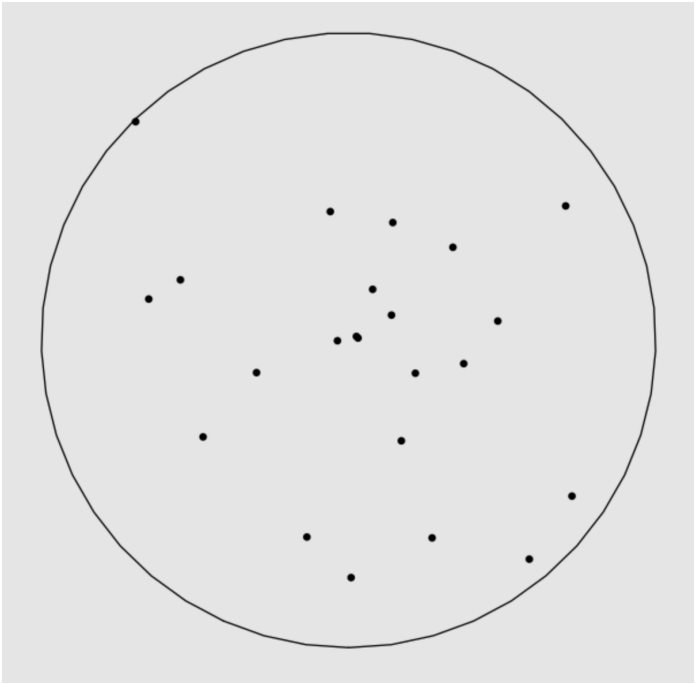


Figure Screenshots-B.38: Hard task, correct answer.

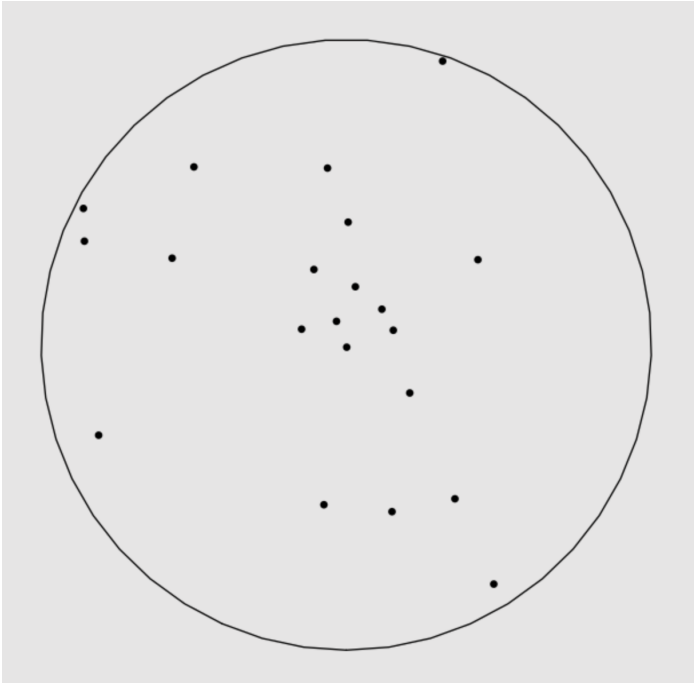


Figure Screenshots-B.39: Hard task, wrong answer.

Part 3: Instructions

In Part 3, you will face 4 different scenarios.

Like in Part 2, you will see two circles with dots, each displayed only briefly.

First, you are asked to choose which circle has more dots.

Next, you are asked how certain you are about your decision. Specifically, we are interested in **what you think is the chance (in percent) that your answer is correct**. You will report your answer on a slider as follows:

We are now ready to begin Part 3.

Figure Screenshots-B.40: Instructions page 7.

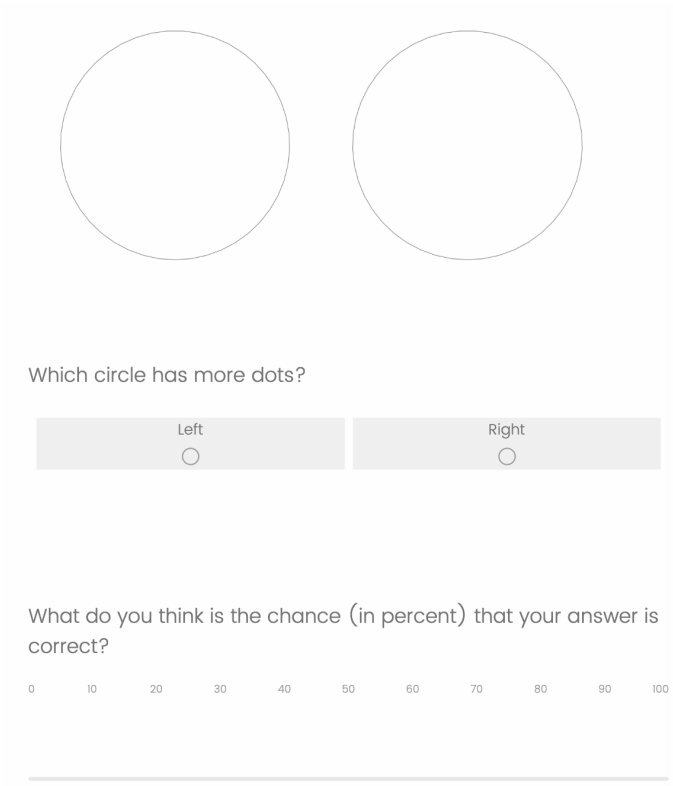


Figure Screenshots-B.41: Perception task with cognitive uncertainty.

3 Experiment C, Compound Lotteries

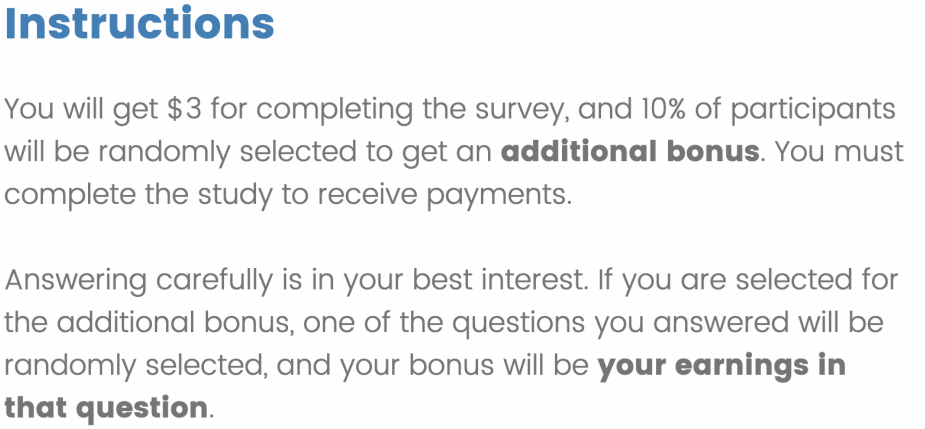


Figure Screenshots-C.42: Instructions page 1.

Instructions (continued)

Please **read these instructions carefully**. There will be a **short quiz** at the end.

You will face several scenarios. In each scenario, there are **one or more card decks** and **one card is randomly drawn.**

The cards in the decks can have different colors.

Each scenario gives you some information about the composition of the decks. For example, you may face the following:

> A deck contains **50 Green** cards and **50 Purple** cards.
>
> The computer shuffles the deck and then draws a card.

Or you could face the following:

> There are **2 decks**. Each contains **50** cards:
>
> - In deck 1: **50%** of cards are **Purple** and **50%** are **Green**
> - In deck 2: **50%** of cards are **Purple** and **50%** are **Green**
>
> The computer **selects one of the two decks at random**, shuffles the selected deck and then draws a card.

The decks are **different** in each scenario, so read carefully.

Figure Screenshots-C.43: Instructions page 2, main treatment.

Instructions (continued)

Please **read these instructions carefully**. There will be a **short quiz** at the end.

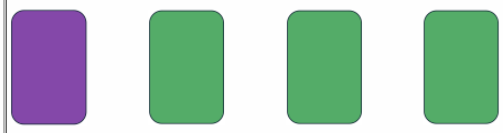
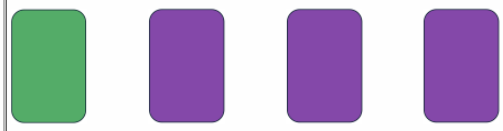
You will face several scenarios. In each scenario, there are **one or more card decks** and **one card is randomly drawn.**

The cards in the decks can have different colors.

Each scenario gives you some information about the composition of the decks. For example, you may face the following:

> A deck contains **50 Green** cards and **50 Purple** cards.
>
> The computer shuffles the deck and then draws a card.

Or you could face the following:

> There are **2 decks**. Each contains **4** cards:
>
> - In deck 1: **1** card is **Purple** and **3** are **Green**
>
> 
>
> - In deck 2: **3** cards are **Purple** and **1** is **Green**
>
> 
>
> The computer **selects one of the two decks at random**, shuffles the selected deck and then draws a card.

The decks are **different** in each scenario, so read carefully.

Figure Screenshots-C.44: Instructions page 2, graphical treatment.

Instructions (continued)

Please **read these instructions carefully**. There will be a **short quiz** at the end.

You will face several scenarios. In each scenario, there are **one or more card decks** and **one card is randomly drawn.**

The cards in the decks can have different colors.

Each scenario gives you some information about the composition of the decks. For example, you may face the following:

> A deck contains **50 Green** cards and **50 Purple** cards.
>
> The computer shuffles the deck and then draws a card.

Or you could face the following:

> There are **2 decks**. Each contains **50** cards:
>
> - In deck 1: **50%** of cards are **Purple** and **50%** are **Green**
> - In deck 2: **50%** of cards are **Purple** and **50%** are **Green**
>
> The computer **combines the two decks together**, shuffles, and then draws a card.

The decks are **different** in each scenario, so read carefully.

Figure Screenshots-C.45: Instructions page 2, mirror treatment.

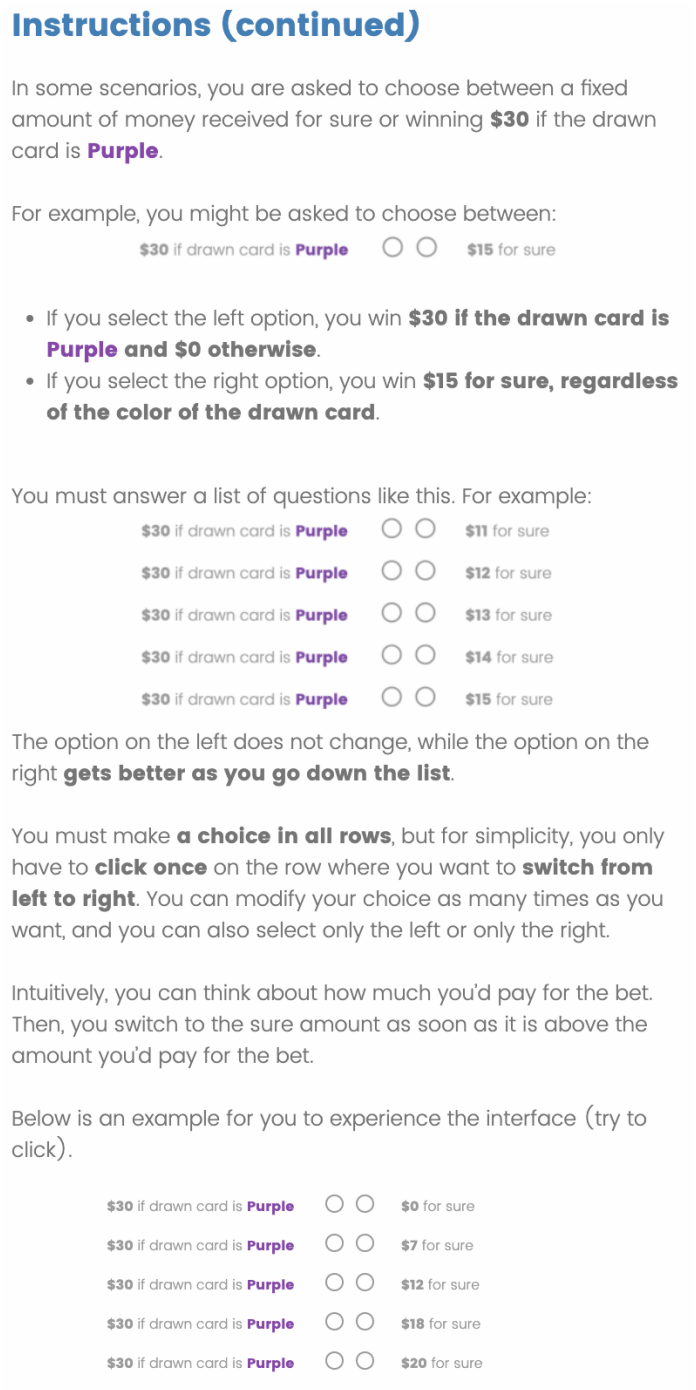


Figure Screenshots-C.46: Instructions page 3.

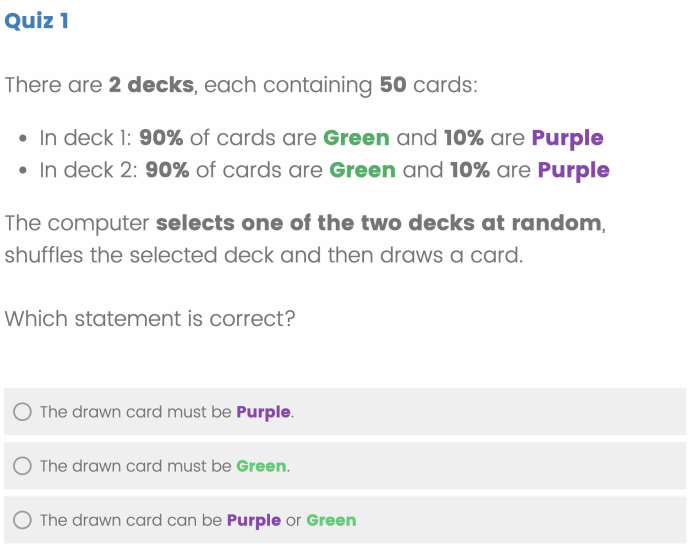


Figure Screenshots-C.47: Quiz question 1, main treatment.

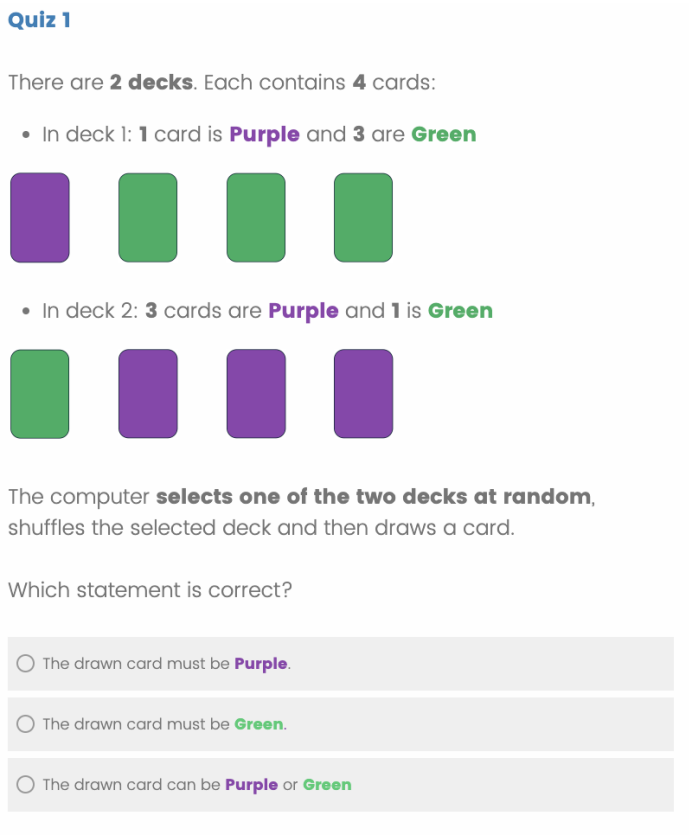


Figure Screenshots-C.48: Quiz question 1, graphical treatment.

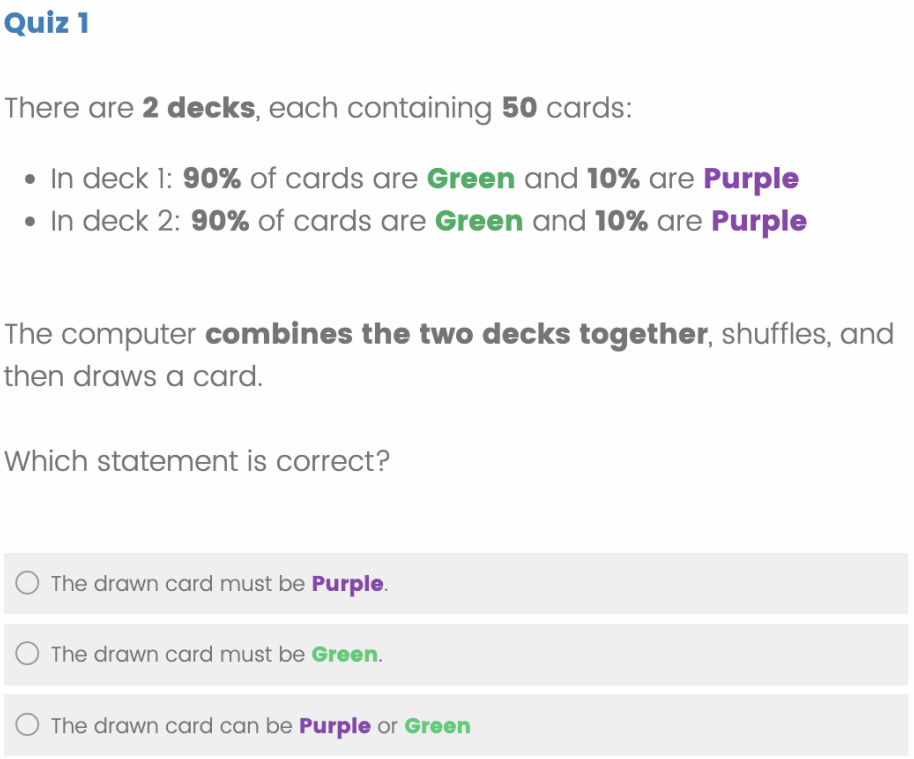


Figure Screenshots-C.49: Quiz question 1, mirror treatment.

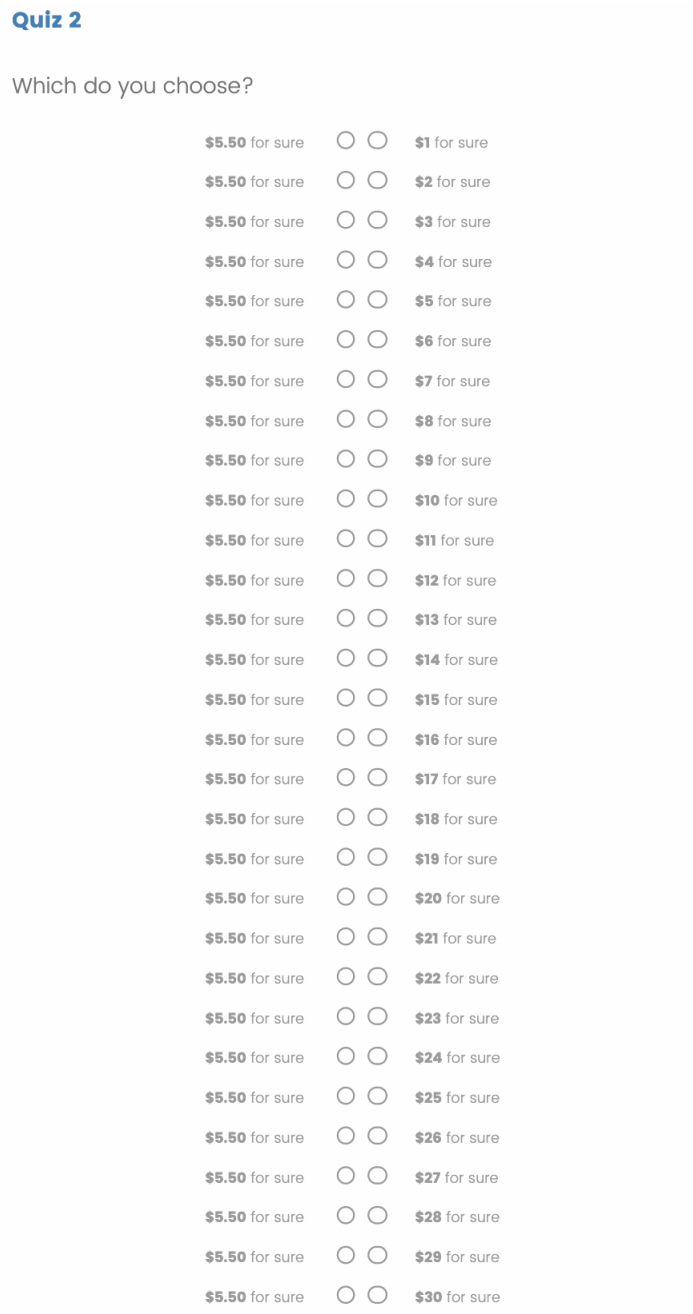


Figure Screenshots-C.50: Quiz question 2.

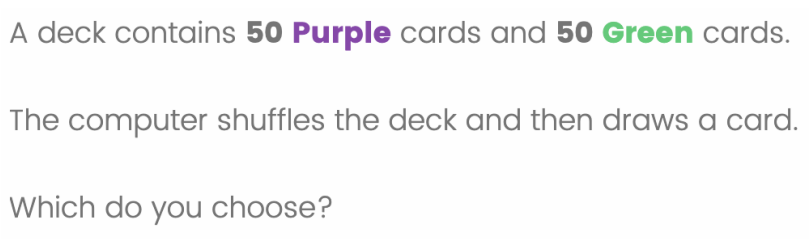


Figure Screenshots-C.51: Risk question 1.

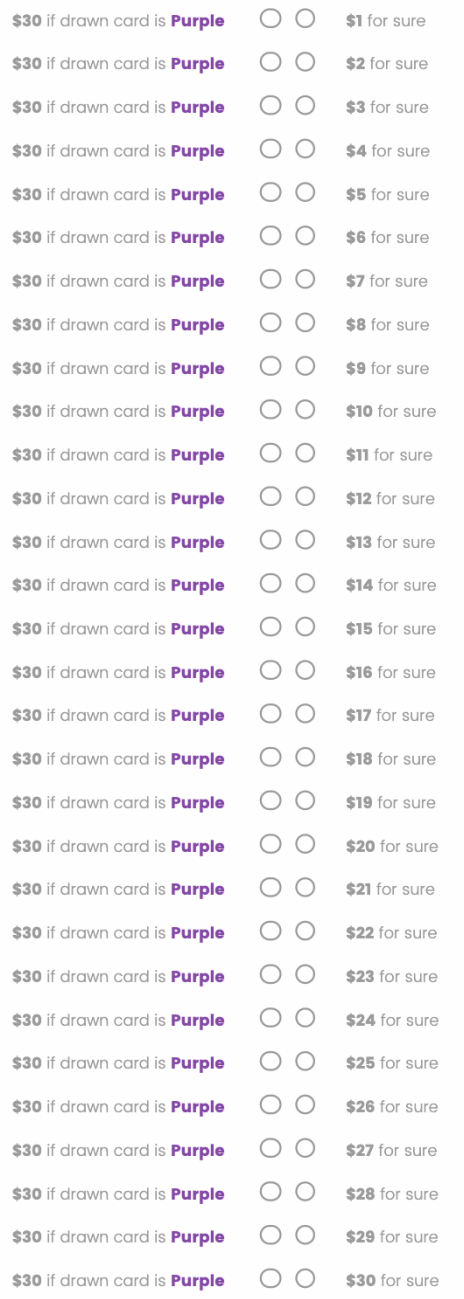


Figure Screenshots-C.52: MPL.

A deck contains **70 Purple** cards and **30 Green** cards.

The computer shuffles the deck and then draws a card.

Which do you choose?

Figure Screenshots-C.53: Risk question 2.

A deck contains **30 Purple** cards and **70 Green** cards.

The computer shuffles the deck and then draws a card.

Which do you choose?

Figure Screenshots-C.54: Risk question 3.

A deck contains **25 Purple** cards and **25 Green** cards.

The computer shuffles the deck and then draws a card.

Which do you choose?

Figure Screenshots-C.55: Risk question 4.

A deck contains **100** cards. Each card is either **Purple** or **Green**.
You are not told the exact number of **Purple** or **Green** cards.
They could be all **Purple**, all **Green**, or any combination.

The computer shuffles the deck and then draws a card.

Which do you choose?

Figure Screenshots-C.56: Ambiguity.

There are **2 decks**. Each contains **50** cards:

- In deck 1: **20%** of cards are **Purple** and **80%** are **Green**
- In deck 2: **80%** of cards are **Purple** and **20%** are **Green**

The computer **selects one of the two decks at random**,
shuffles the selected deck and then draws a card.

Which do you choose?

Figure Screenshots-C.57: Non-trivial compound lottery, main treatment.

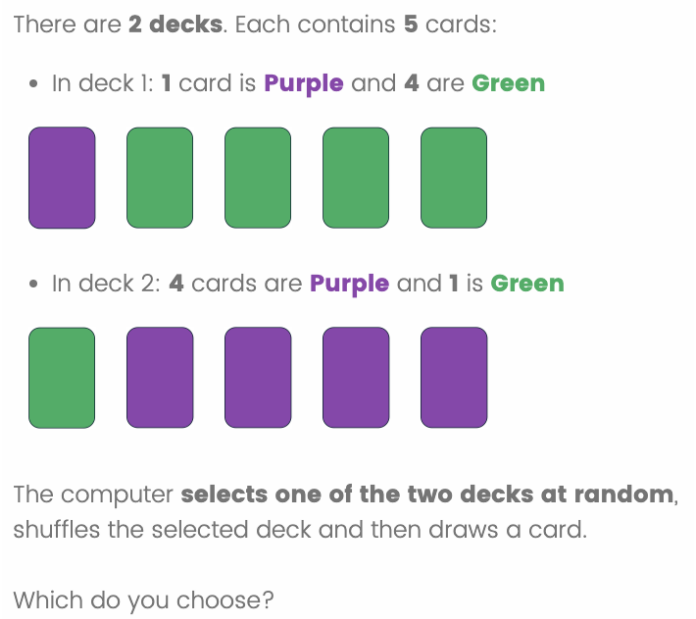


Figure Screenshots-C.58: Non-trivial compound lottery, graphical treatment.

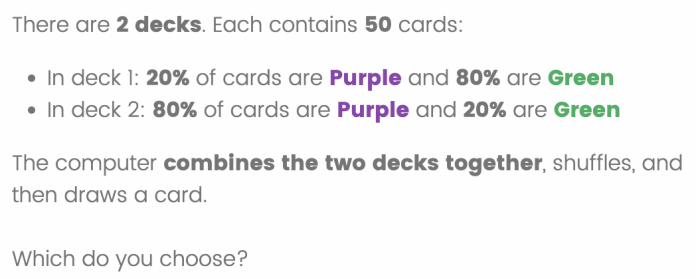


Figure Screenshots-C.59: Non-trivial compound lottery, mirror treatment.

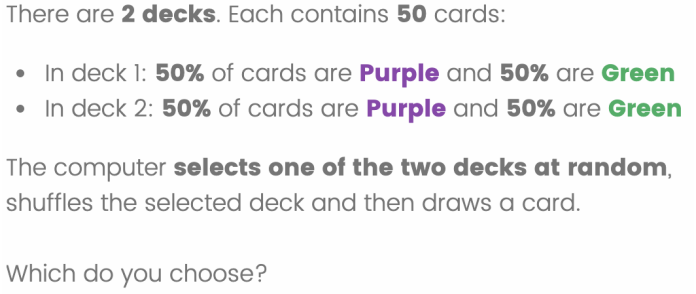


Figure Screenshots-C.60: Trivial compound lottery, main treatment.

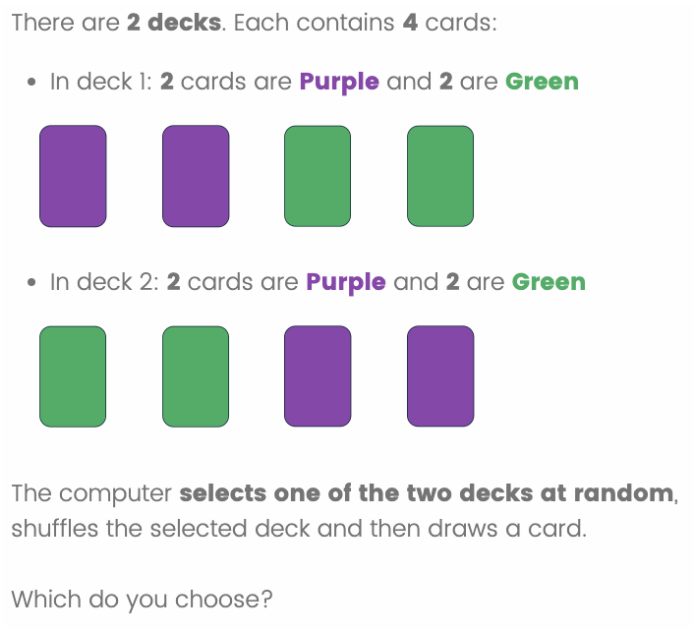


Figure Screenshots-C.61: Trivial compound lottery, graphical treatment.

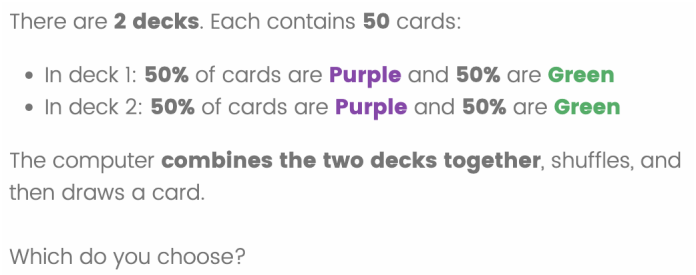


Figure Screenshots-C.62: Trivial compound lottery, mirror treatment.

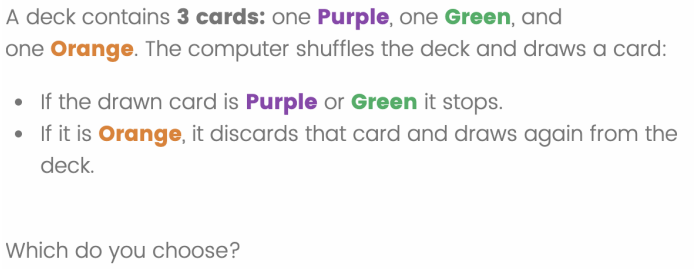


Figure Screenshots-C.63: Draw-again compound lottery, main treatment.

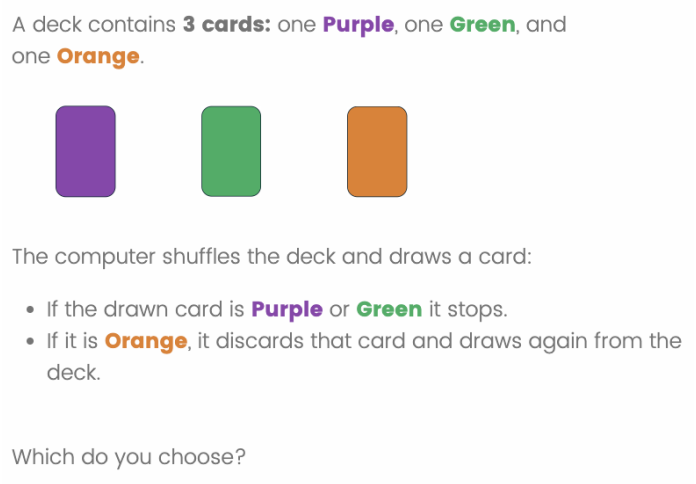


Figure Screenshots-C.64: Draw-again compound lottery, graphical treatment.

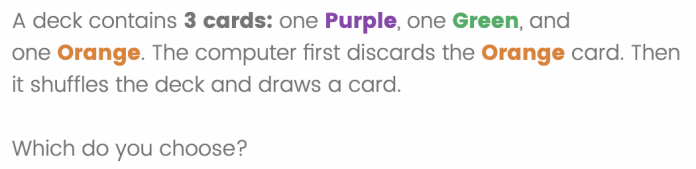


Figure Screenshots-C.65: Draw-again compound lottery, mirror treatment.

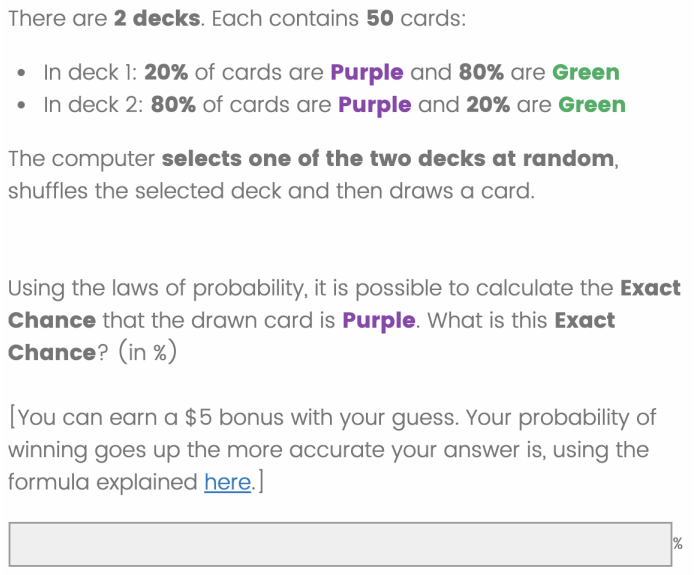


Figure Screenshots-C.66: Non-trivial compound lottery with binary scoring rule, main treatment.

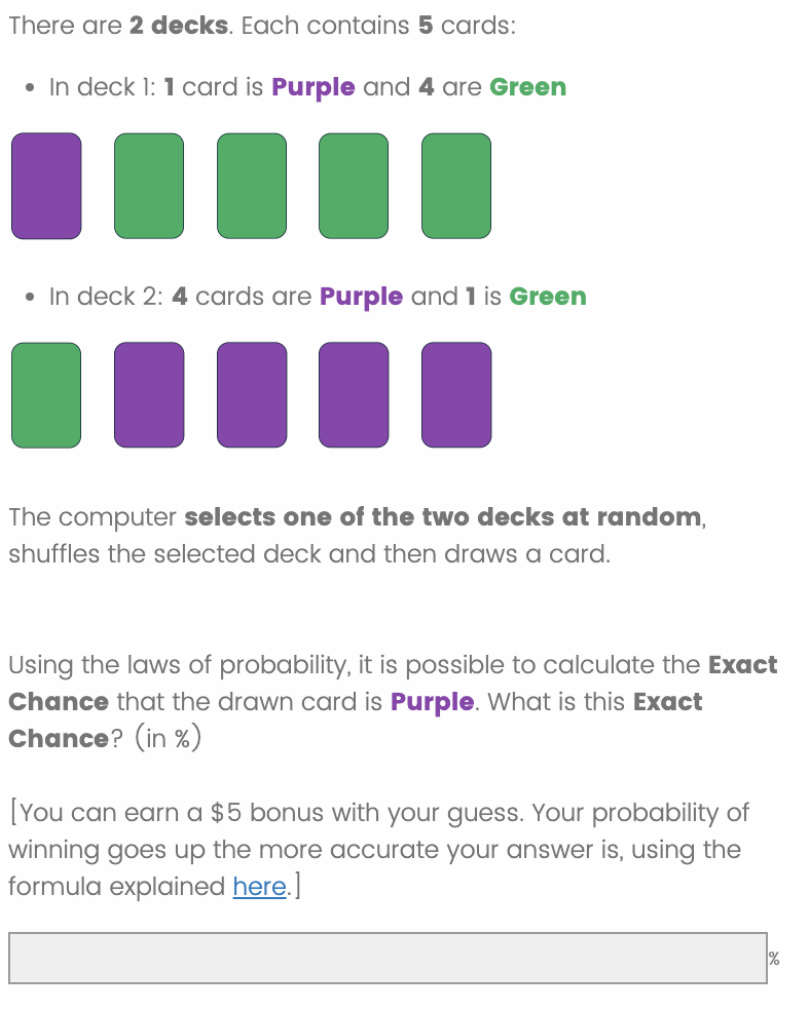


Figure Screenshots-C.67: Non-trivial compound lottery with binary scoring rule, graphical treatment.

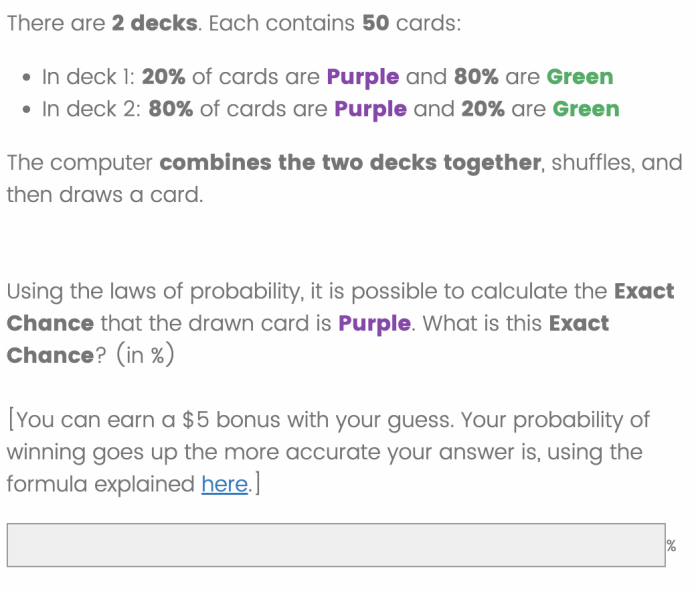


Figure Screenshots-C.68: Non-trivial compound lottery with binary scoring rule, mirror treatment.

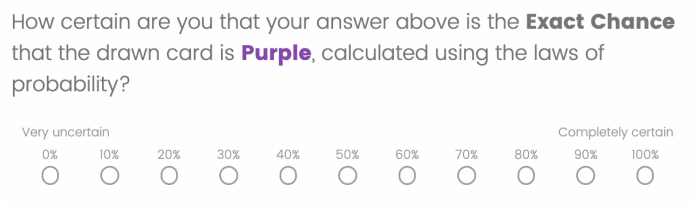


Figure Screenshots-C.69: Cognitive Uncertainty question.

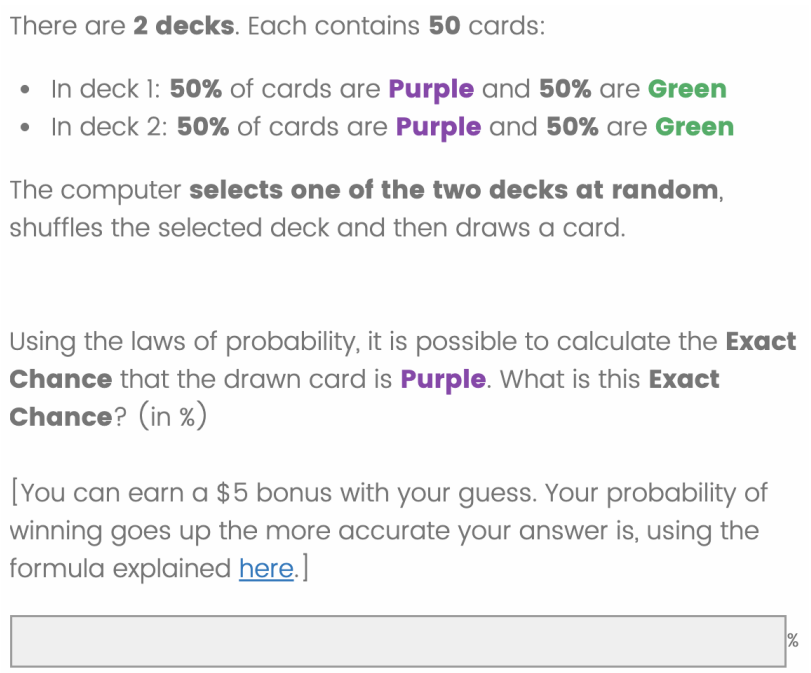


Figure Screenshots-C.70: Trivial compound lottery with binary scoring rule, main treatment.

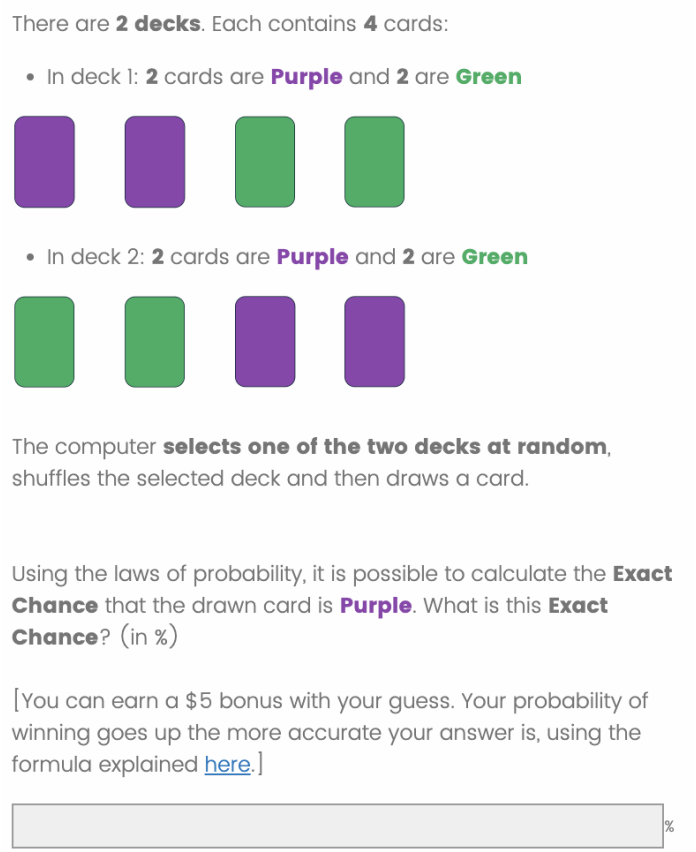


Figure Screenshots-C.71: Trivial compound lottery with binary scoring rule, graphical treatment.

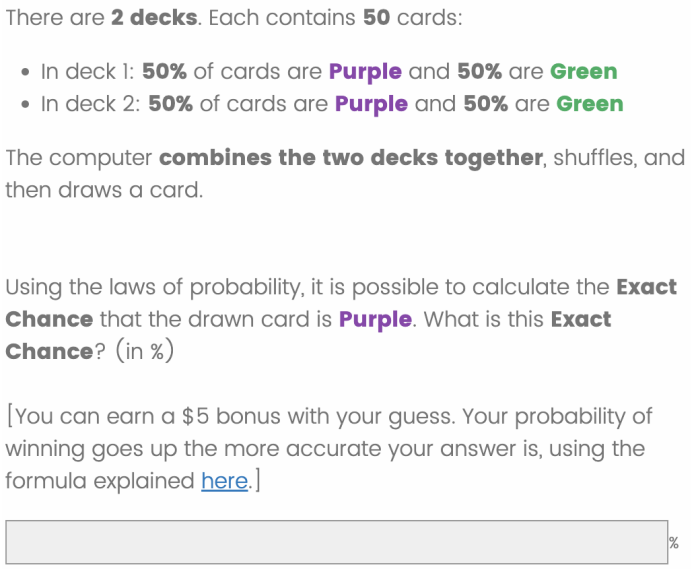


Figure Screenshots-C.72: Trivial compound lottery with binary scoring rule, mirror treatment.

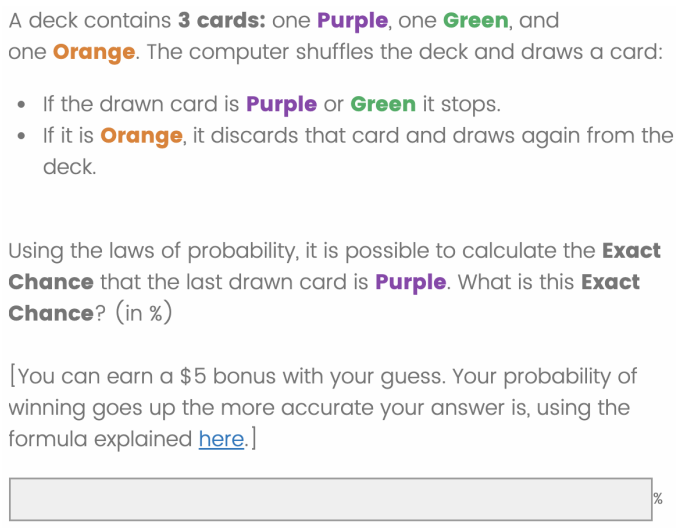


Figure Screenshots-C.73: Draw-again compound lottery with binary scoring rule, main treatment.

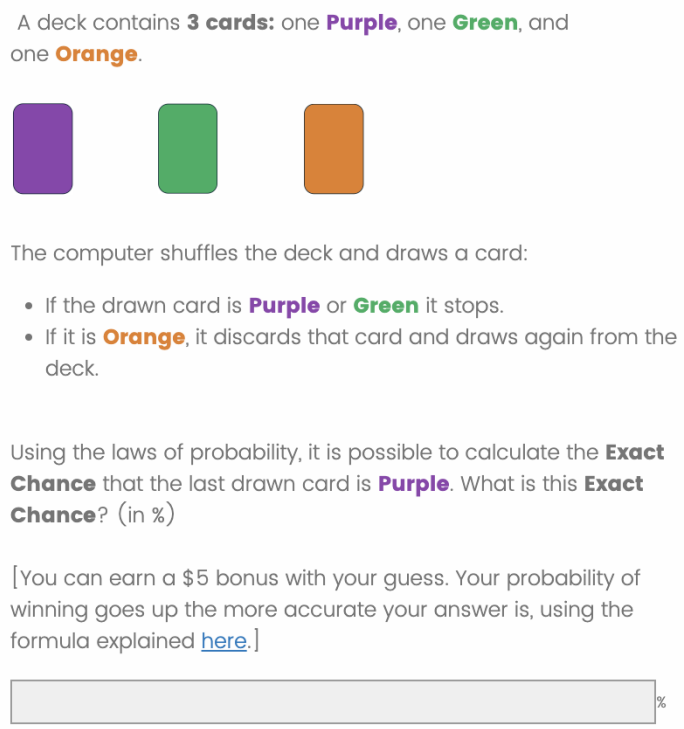


Figure Screenshots-C.74: Draw-again compound lottery with binary scoring rule, graphical treatment.

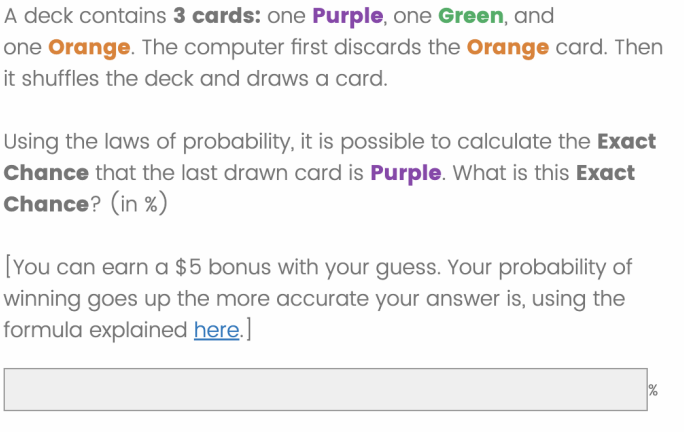


Figure Screenshots-C.75: Draw-again compound lottery with binary scoring rule, mirror treatment.