

Instructions

Colorlink

Thanks for taking our study today! You'll be playing a game called Colorlink. The object of the game is to connect each circle to its matching color. Lines cannot intersect, and your lines must fill all the blank squares in order to complete a board.

Below is an example of a board being completed. Notice how there are no empty black squares left when the board is complete.

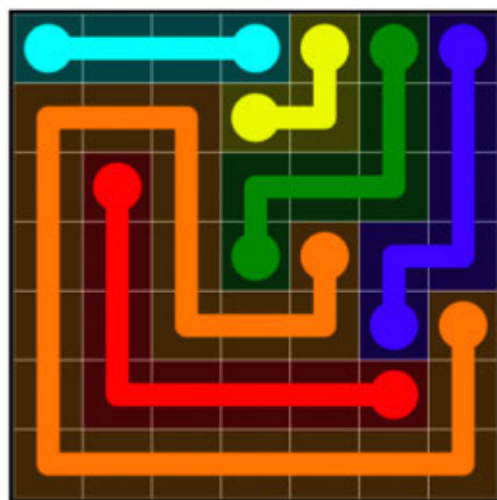
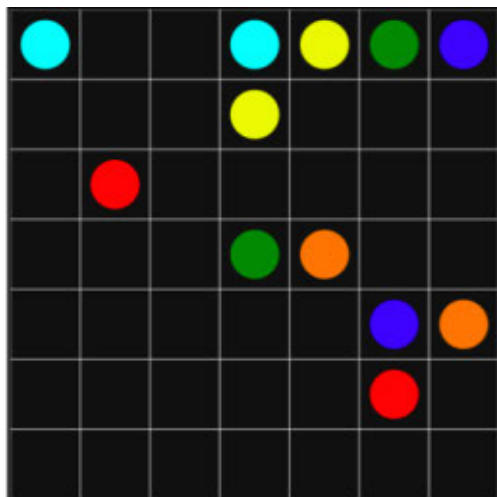
These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*



Please click below to continue when ready.

Teaching how to draw a line

To connect two circles, use your mouse to click and drag a line between them. When the board below loads, practice by connecting the orange circles.



These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Teaching how to fill a board

When the board below loads, please connect the orange dots, but be sure not to leave any empty squares. If you make a mistake, you can undo it by clicking or dragging on existing lines to remove them.

Start!

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

To continue, please enter or paste your Completion Code below.

Practice Board

Now that you know how the game is played, you will play a practice board on the next page. In the study, your score will be based on how quickly you complete each board, but this is just a practice round, so feel free to take your time.

Click to continue when ready.

Please play the practice level below!

Start!

To continue, please enter your Completion Code below.

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Pregame reminder

Thanks for completing the practice session! You are now ready to play the real game.

Keep in mind:

- Your goal is to complete each board **as quickly as possible**
- You must enter the **exact** completion code that appears after finishing the game into the text box below the game screen. Feel free to manually type it, or cut and paste using your keyboard and mouse.

You will play six boards today. Good luck!

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

iud



Start!

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: 0 seconds

Page Submit: 0 seconds

Click Count: 0 clicks

To continue, please enter your Completion Code below.

Thanks for completing that board! Click below when you're ready to continue.

These page timer metrics will not be displayed to the recipient.

First Click: 0 seconds

Last Click: 0 seconds

Page Submit: 0 seconds

Click Count: 0 clicks

advice_inst

Colorlink Advice

Before continuing with the game, you are going to receive some advice about it.

On the next page, you will read advice from a past participant in this study, who also played the Colorlink game.

Please read the instructions below carefully!

- The person who wrote the advice had already played the game several times.
- The advice was written to help you do as well as possible in the game.
- You should try to use the advice to help you as much as possible in the game.

In a few seconds, you will be able to proceed to the next page and read the advice. Please take time to review the instructions above, and make sure that you understand them completely.

These page timer metrics will not be displayed to the recipient.

First Click: 0 seconds

Last Click: 0 seconds

Page Submit: 0 seconds

Click Count: 0 clicks

advice_given

Below is advice that an earlier participant in this study wrote about the Colorlink game. Please read it carefully, and use it to help you do as well as you can in the game.

These page timer metrics will not be displayed to the recipient.

First Click: 0 seconds

Last Click: 0 seconds

#QuestionText, TimingPageSubmit#: 0 seconds

#QuestionText, TimingClickCount#: 0 clicks

"Connect the dots closest to each other first."

"I would move the balls that are furthest away from each other first. I would also go for the ones near the corner or edges. "

"The best way to complete the board is by linking the colors that are furthest apart first. This will allow you to see patterns and quickly link the colors that are close together in the best way. If you get stuck and two colored lines seem to be intersecting, try to attach the line from one color to another by taking the line in the opposite direction and coming at it from a different angle. This will usually solve any conflicting lines."

"ALways test the longets routes first, the rest will be easy."

"Connect the dots with the shortest ling first. Then focus on the dots on the corners. It is easier to work from the inside to the outside."

"Complete the colors that are closest to eachother first.
Complete the colors where there is only one way to complete it."

"Be sure not to separate two colored dots. If while building a line between two of the same color, make sure to roughly build a line of sight between other colors' dots so that you don't isolate them from each other.

If the dots are close together, they will likely connect via short distance. The ones that are further apart are the ones that will need a more circuitous route. Connect the short ones first and then look at what's available for the ones farther apart. "

"If you get stuck- see if there are any other ways to make the colors connect than what you are already taking."

"My advice for strategy would be to connect the dots farthest apart first, so that you can create paths for the closer dots with the board "map" already mostly in place."

"For me the trick to this game was to keep the entire board in mind at all times. When you initially start the most obvious move is to immediately match all the colors that are extremely close to each other. I then look for the next and then the next in closeness. You just have to be mindful of other connections that need to be made"

"Connect the colors that are closer together first. Then fill up the rest of the space with the farther apart colors. Try to hug the walls whenever possible. Try to leave plenty of space in the middle of the board."

"The main thing to focus on first are the dots that are the closest together. Those have the least possible pathways. Also try to do the ones first that you realize can't have very many possible paths."

"try starting by connecting the dots that are closest together first. then weave dots together around those. finish around the perimeter of the board last."

"Try to stay to the outside as much as possible, and work your way inward"

"When completing the board its easiest to make all the small simple connections first and then work your way out to the longer ones."

"Start with the largest gap between colored dots and move backwards from there."

"First start with the dots of the same color that are close to each other and connect those ones first. Then you will be able to see a distinct path for the longer lines of the same color to connect. Once you complete the first few it gets easier each time."

"Much easier using a normal mouse on a hard surface. Make sure when you're connecting lines you don't accidentally hit another line or it breaks it up and you have to redo it from where you hit it. Boards aren't too complicated. You just need to take a few seconds at the start and look at the whole board. I found it easier to connect the farthest dots first and work my way down to the ones that were closest to each other. Don't really need any sort of strategy. Just try and draw the lines on the outside of the board and work your way into the middle."

"The objective should be to find the pairs of dots that connect in order of decreasing difficulty. That is, connect the two dots which are most difficult to connect first, followed by the next most difficult pair of dots to connect, and so on. If a mistake is made, do not worry

about undoing it. Just continue with the next correct action as connecting two dots over an existing path will overwrite any previous paths."

"The only piece of advice I can really offer is just go for it. don't try to strategize or think it out. Just start and see if certain moves work."

"Puzzles like this are not my strong suit but I still enjoy the challenge, even if they are a bit frustrating for me. What I did was randomly start connecting colors and redoing them over and over as I saw where by connecting one color another would be blocked from being able to connect. By trial and error I was eventually able to connect all the colors with none being blocked and thus cleared the boards. The biggest drawback to my method is that it can be quite time consuming. I wish I could give better advice but I do not have the most analytical mind. That's the best advice I can give you, other than just relax with it and have fun!"

"Start with the the ones that are closest to the edges of the board. Get the long ones out of the way and then worry about the ones that are close together. Don't overthink it. It's not too difficult."

"Focus on connecting the dots that are the furthest apart first. That way you have a better chance of not having to undo the shorter connections later if your longer paths are blocked. Also, be fluid in drawing your lines. You don't have to go one square by one square. Just draw fluidly to save time."

"When it comes to connecting all the colors, set small goals. connect one color and then another, and don't be afraid to mess up. a lot of your solutions will come from failures. "

"Quickly scan the board for dots that can only be connected in one way and connect them first. The remaining ones will fall into place more easily once those are finished. As you are connecting the remaining dots, pay attention to the path you are taking and make sure it does not block the paths that will need to be used to connect the other dots."

"Generally try to start with the color that has the two dots that are closest together, knocking those out will clear up how the board will look at the end. Also try to work from outside in, taking care of all the outside squares first so that you don't finish a level with a random square available."

"Always connect the 2 closest dots first and work from there. If you are having trouble thinking of how it should fit together, just start connecting the dots and replace the ones

you did incorrectly because it will be easier for you to see what will fit when there aren't as many open spaces left."

"Try to connect the dots right off the bat instead of trying to figure it out in your head. Many of the solutions will come when you can visually see them."

"It is usually easier if you connect the closest ones first. Start from the inside and work your way out. If you are having a tough time with one color, move on to the next, and come back to it later. "

"Just go for it, start connecting colors right away and it will quickly become apparent how to complete the board"

"you will need to use patience. it is important to plan your moves with care. try to connect the close items first, then work your way up to the larger distance items."

"Dont try to figure it out all in your head. Go ahead and start connecting immediatly then fix it as you go along "

"If you can't seem to figure it out then start over and do something different."

"When trying to connect colors that look farthest from each other, try and use the route that is least direct. One that uses up most boxes."

"Try to connect the harder ones first maybe, like if one of the dot things is somewhere where there is only one way in or out do that one first and the rest later probably?"

"connect the dots that are closest together first before moving on to dots further apart. "

"Start by finding colors that have the closest distance and work your way up from there."

"The way to do well is by process of elimination. Look for obvious paths first, and then go from there."

"I would suggest starting by connecting the dots furthest apart and closest to the edges of the board, then work your way down by then completing the next furthest, until you finish."

"Don't always go for the obvious pattern. Try to weed out the ones that only have one way to go first. Or do the difficult ones first."

"Find the circles that are farthest apart and connect those first and then the closer ones will be evident of the path you need to connect them. "

"Start with the ones that will only have one solution possible."

"Focus on the shortest links first, then the longest links. The rest will fall into place"

"I would start by linking the dots that are closest together on the board and then moving outward to the dots that are farther apart, in this way you avoid intersecting lines when you are linking the colors."

"Complete the shortest routes first. Trust your intuition, as it is easy to change your mind if you feel you're wrong."

"Take your time and think things through. Do not rush through the game it's okay to make mistakes as long as you can quickly adjust them. Be calm don't get frustrated and you will do great."

"Just find the ones that are obvious first, do those, then move on to the next one that is obvious. Don't over complicate it, it's really simple."

"The best advice I can offer is to make the long connections first; that is. try to link the color that takes up the most squares first. Then you can work around with the colors that take up smaller squares."

"Start with the easy connections first, then work your way up to the ones that are more far apart. Usually once you get most of the board it's pretty easy to figure out where everything else should go. "

"My advice is just to start each board and go with your gut instinct on which color to choose 1st. Try to make the 1st couple colors passes go around the perimeter or the long way, that way the ones towards the middle can be done without any mistakes."

"Look for the obvious connections first. Then sort out your pathing from there."

"When you have two colors that look like they will have to cross paths, just make them go opposite ways, or around each other kind of like a clock. Also, the shortest distance between pairs is usually the most likely path. When you start, start with the corners or the edges first."

"Don't be afraid to make mistakes. It's very easy to undo them than to just try to get it right the first few tries."

"Find the most constrained points (those with the fewest directions the line can travel) and start from those."

"Find the two same color dots that are furthest apart and work out the path for them. Then the next two furthest apart etc. Remember once you've made a line it is easily rearranged by clicking on it and dragging it."

"M advice is to find the ones furthest apart and start there. A lot of them seem to work inside out. Meaning work from the inside of the board and work out. "

"I found it helps to figure out the outer paths first. As you go along the path, try to check the other color dots to be sure that you're not blocking paths for them."

"I found it difficult at first but after a few games I completed them a lot quicker. I learned strategies but it is hard for me to verbalize it. For example, as you are playing, when you see that a line will intersect/cut off a necessary future "link" between other colors, immediately stop the line and look for another possibility. If possible, use up as much space by winding the links (to take up free space)."

"Look for the farthest away pair then work your way in."

"First, make the shortest and most direct. Then look at situations where two different-colored circles are close together. Try to determine which directions you can go so the lines overlap. You could instead try to make the most far apart connections first using the most square as possible, then try to connect the closer together circles of the same color and adjust accordingly."

"Start with the dots that are furthest from each other, then work the shortest distance and alternate until the end."

"My advice is to not overthink it. Do the shortest legs first and the longer ones will become obvious."

"Experiment at first. Try to see where certain color lines would HAVE to fill in the space in order for all the spaces to be filled."

"Try to be patient and think about all possible combinations "

"Best way is to just start connecting the dots right off the bat and correct yourself as you go. You may be wrong the first time but you can easily fix it."

"My advice for doing well in the Colorlink game is to first complete the simple color patterns first. If you correctly fill-in the easier patterns, this will make the harder color paths easier to figure out. "

"Instead of taking time in the beginning to think about how to connect to each dot in the best way, just start connecting dots immediately. Even if it isn't correct, you'll be able to see quicker which way is going to work by already having connections as opposed to trying to form it in your head. I found that this was the best way to get the board completed quicker."

"Try to connect dots on the edges first. Try to connect simple paths next. Try to leave openings for complicated paths. "

"I think the most important advice that I can give is to pinpoint the colors that are far away or what looks like to be the hardest to connect and try to find the right route to connect. You will get the hang of it after awhile even though they get more difficult as they go. "

"Try to connect to two furthest away first. Then work the shortest distance. You will encounter paths that cross, but that is okay. Once you have a few connected the path reveals itself. "

"the only advice is keep trying"

"Map things out in your head or by tracing with your mouse first. If you come to a block, just drag through it and it will overwrite what was there instead of having to manually remove the colors."

In a moment, you'll be able to proceed to the next page. Make sure you've carefully read the advice above before you continue.

advice_post

Thanks for reading that advice! Click below when you're ready to continue.

hjt



Start!

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

To continue, please enter your Completion Code below.

Thanks for completing that board! Click below when you're ready to continue.

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: 0 seconds

Click Count: 0 clicks

ypl

Start!

These page timer metrics will not be displayed to the recipient.

First Click: 0 seconds

Last Click: 0 seconds

Page Submit: 0 seconds

Click Count: 0 clicks

To continue, please enter your Completion Code below.

Thanks for completing that board! Click below when you're ready to continue.

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

sqt

Start!

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

To continue, please enter your Completion Code below.

Thanks for completing that board! Click below when you're ready to continue.

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

jfm



Start!

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: 0 seconds

Click Count: 0 clicks

To continue, please enter your Completion Code below.

Thanks for completing that board! Click below when you're ready to continue.

These page timer metrics will not be displayed to the recipient.

First Click: 0 seconds

Last Click: 0 seconds

Page Submit: 0 seconds

Click Count: 0 clicks

Inc

Start!

These page timer metrics will not be displayed to the recipient.

First Click: 0 seconds

Last Click: 0 seconds

Page Submit: 0 seconds

Click Count: 0 clicks

To continue, please enter your Completion Code below.

Thanks for completing that board! Click below when you're ready to continue.

These page timer metrics will not be displayed to the recipient.

First Click: 0 seconds

Last Click: 0 seconds

Page Submit: 0 seconds

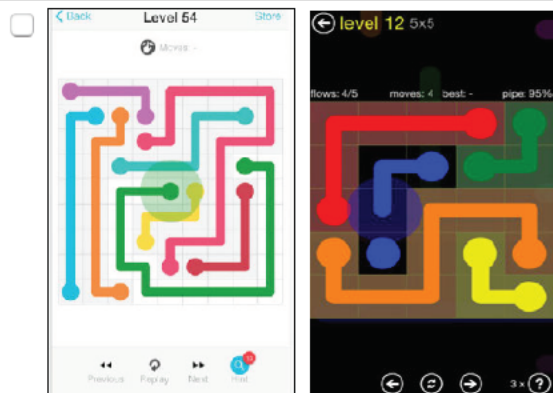
Click Count: 0 clicks

Previous experience

You've completed all the boards! Please click below to continue the survey.

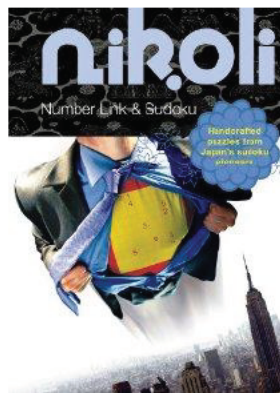
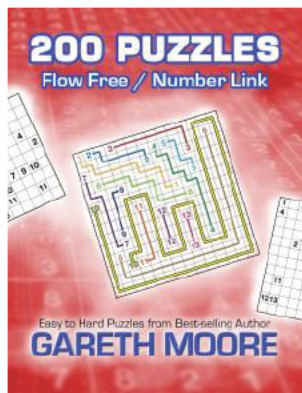
The game you played today was called Colorlink, and involved matching pairs to each other by drawing lines. There are many versions of Colorlink, sometimes with numbers instead of colored circles.

Before today's study, have you played Colorlink before? (check any and all that apply)



Yes, I've previously played some version of Colorlink on my computer, phone or tablet. (ex: Numberlink, Draw the Line, Flow, Bridges)

☐



Yes, I've previously played some version of Colorlink in puzzle books

☐ Yes, other:

☐ No, I've never played any versions of Colorlink before today

You indicated that you've played some version of Colorlink before.

Before today's study, when was the most recent time that you played a version of Colorlink?

- ☐ Within the last week
- ☐ Within the last month
- ☐ Within the last 6 months
- ☐ Within the last year
- ☐ Over a year ago

As best as you can recall, when was the first time that you played a version of Colorlink?

- ☐ Within the last month
- ☐ Within the last 6 months
- ☐ Within the last year
- ☐ Within the last 3 years
- ☐ Within the last 5 years
- ☐ More than 5 years ago

Earlier in this study, you received advice from a past participant who played the Colorlink game.

Compared to most people, how skilled do you think the advice writer was at Colorlink?

- ☐ They were less skilled than most people
- ☐ They were about as skilled as most people
- ☐ They were more skilled than most people

Compared to you, how skilled do you think the advice writer was at Colorlink?

- ☐ They were less skilled than me
- ☐ They were about as skilled as me
- ☐ They were more skilled than me

How helpful was the advice you read about Colorlink?

1 - Extremely unhelpful	2	3	4	5	6	7 - Extremely helpful
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Earlier in this study, you read advice from a previous participant who played the Colorlink game. How much do you think their advice helped you improve?

	0% improvement (not at all)						100% improvement or more (a lot)
	0	20	40	60	80	100	
How much did their advice help you?							

How experienced do you think you were with Colorlink before you took this study, compared to most people?

- ☐ I was less experienced than most people
- ☐ I was as experienced as most people
- ☐ I was more experienced than most people

How skilled do you think you were with Colorlink before you took this study, compared to most people?

- ☐ I was less skilled than most people
- ☐ I was as skilled as most people
- ☐ I was more skilled than most people

How well do you think the average person does at the game you played today?

Average time to complete a board (in seconds)

How well do you think the person who wrote your advice does at the game you played today?

Average time to complete a board (in seconds)

Demographics

How are you taking this survey right now?

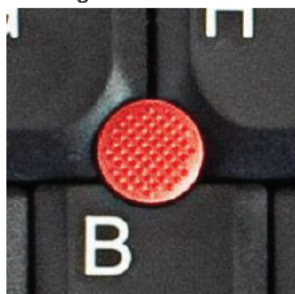
☐ With a computer mouse



☐ With a trackpad



☐ Pointing Stick



☐ Touch Screen



☐ Other

Earlier research on decision-making has shown that people vary in the amount they pay attention to these sorts of surveys. If you're reading this question, please answer it by selecting the option "other" and typing in the word "salmon." Thanks for your help, and for taking the time to carefully read each question.

- ☐ Gender, marital status, and education
- ☐ Sexual orientation, relationship satisfaction
- ☐ Hobbies, favorite sports
- ☐ Other

What internet browser are you using?

- ☐ Safari
- ☐ Internet Explorer
- ☐ Mozilla Firefox
- ☐ Google Chrome
- ☐ Opera
- ☐ Other

- ☐ I'm not sure

Please answer a few more questions to conclude the study.

How old are you?

Please indicate your gender:

- ☐ Male
- ☐ Female
- ☐ Prefer not to answer

Do you have normal color vision? If not, please be specific about the nature of your color blindness (ex: red-green colorblind, blue-yellow colorblind, etc).

- ☐ Yes, I have normal color vision
- ☐ No (explain)

Is English your only native language?

- ☐ Yes
- ☐ No, English is not my native language
- ☐ No, I spoke English and other languages growing up

Since you indicated that you grew up speaking languages other than English, please tell us what language(s) you grew up speaking:

What do you think this study was about?

If you have any other comments about the study you took part in today, please tell us below:

Credit code

Please click the arrow to submit your answers and receive your HIT credit code.

Do not close this window until you write down the code on the next page, or you will not be able to redeem your Amazon MTurk HIT credit.
