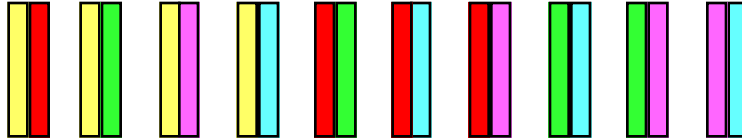# Predict The Ending

The trick has 10 chips with colored faces. The sides vary in color. No chip has 2 faces with the same color. The colors used in this example are red , blue , green, yellow and violet. Secretly hold out one of the 10 chips and hand the student the remaining bi colored chips.

The student is told to start with any chip they chose. They must then stack the chips together by placing the chips face to face but the faces that touch each other must have the same color. For example, if they have a chip with a yellow side the new chip must have a yellow side and it must be placed so the yellow sides touch. **They can add the new chip on the left end or the right end as long as the common faces have matching colors.** They continue this process until all 9 chips have been stacked.

You do not see the student stack the chips or observe the chips at any time but you can tell them the colors of the right and left ends of their stack of chips. You can repeat this over again.

All 9 chips have been stacked and the ends are green / red

The colors on the ends of their stack must match the the 2 colors on the chip you held out. Without seeing their stack you predict their ends are green / red

amagicclassroom.com

Predict The Ending

The trick has 10 chips with colored faces. The sides vary in color. No chip has 2 faces with the same color. The colors used in this example are red , blue , green, yellow and violet. Secretly hold out one of the 10 chips and hand the student the remaining bi colored chips.

Procedure:

Take one of the 10 chips without the student knowing it and note the 2 numbers on the faces. Tell the student that they have 9 chips and put them on the desk.

Demonstrate the following procedures with them watching.

You take one of the 9 chips and place it on the desk. Select a second chip that has a face that matches the color the **top face** of the first chip and place it **on top of the first chip** so the faces with the matching colors are face to face. Select a third chip from the remaining ones that matches the color on the **bottom face** of the first chip an place it ion the bottom of the stack so that the faces with the matching colors are face to face. Tell them that they can **add each new chip on the top or the bottom of the stack as long as the common faces have matching colors.** Tell the student that are to continue this process until all nine chips have been used. Tell them when this has been completed they need to note what numbers are on the **top end** and the **bottom end** of the stack of chips.

Have them do it:

After you are sure they know what to do shake up the 9 chips and lay then out of the desk . Turn your back to them and tell them to lay down any one of the 9 chips and then continue the process they just practiced with you. Tell them to announce when they are done. Without turing around you state the colors on both ends of their stack of chips! **Their colors will be the 2 colors on the chip in your hand.**

Do it again.

Most of the time the students will ask you to do it again. Take the nine chips in your hand along with the one already there. Shake them up and keep one in your hand when you put the other 9 on the desk. Turn around and perform the trick again.

There is a small chance that the process will hit a snag.

In a very few cases at one point in the process **none of the remaining chips will work** on either end of the stack. When this happens the student will normally say they are stuck. In the few cases when this happens ask them if both ends of the stack are with the same color.   When they say yes you must decide how you want to proceed.

One way to solve this logjam is to tell them to reshuffle the chips and start over with a different first chip.

The easiest way to handle this case is to tell them to move the chip on the top of the stack to the bottom of the stack so that the faces match and then and go on from there.

Note: The examples below are shown with the stack displayed horizontally. This takes less space on the page. It is easier for students to stack the chips vertically. The process works the same. If I do the trick with the staple tags I must have the students to the trick horizontally so they can see both ends. In that cases I have them hold the chips in their left hand and pick up the new chip in their right hand.

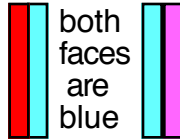# An example of this process is shown below.

You hold a red / green chip.

A student is given the other 9 chips
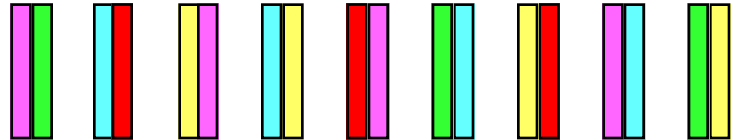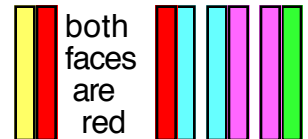
The student starts with a red / blue chip
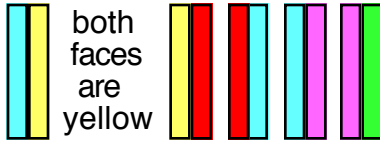
they add a blue / violet chip on the right end

both faces are blue

they add a violet / green chip on the right end

both faces are violet

they add a yellow / red chip on the LEFT end

both faces are red

they add a blue / yellow chip on the LEFT end

both faces are yellow

they add a green / yellow chip on the right end

both faces are green
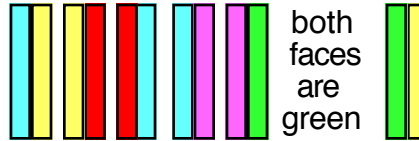
they add a green / blue chip on the LEFT end

both faces are blue
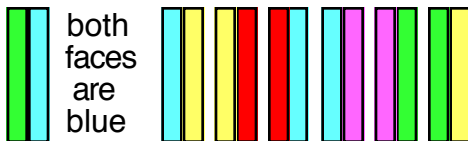
They add a yellow/ violet chip on the right end

both faces are yellow
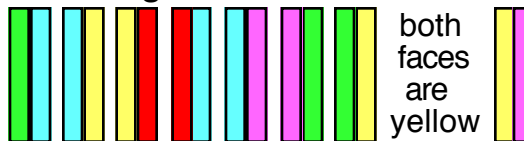
they add a violet/ red chip on the right end
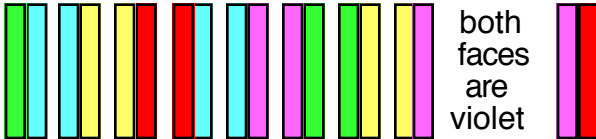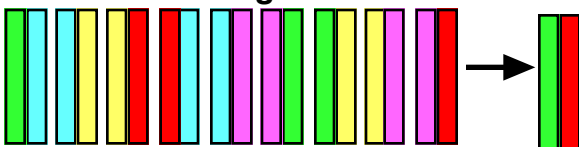
both faces are violet

All 9 chips have been stacked and the ends are green / red

→

The colors on the ends of their stack must match the the 2 colors on the chip you held out. Without seeing their stack you predict their ends are green / red

Why do I need to be able to add to both the right or or left ends.

In many cases you can start with the first chip and continue adding chips to the right end until all the chips have been used up. Depending on the colors on the first chip you select with this may not be possible. **There are two cases where at some point in the process you will not be able to find a chip that will work on the right side.**

Case 1 (common)

No chip remaining will work on the right side but one will work on the left side.

Start with the blue / yellow chip. At some point you will not be able to find a chip that matches the color showing on the right end. If you look at the left end you will see that you can find a chip the will match the blue face on the left end. Add this chip to the left end and continue with the process.
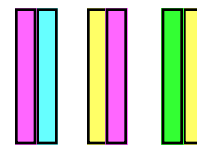
Example

You started with a blue / yellow chip. You added the next 5 chips as shown below.
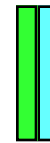
You have used the first 6 chips shown
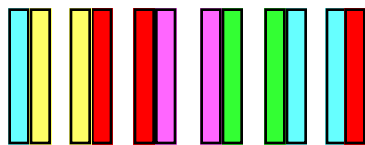
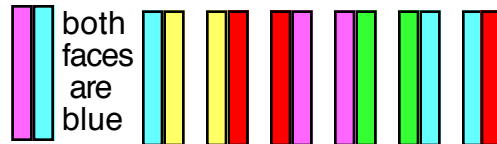**and the 3 chips shown to the right remain**

The color of the face of the chip on the right side of the stack is red and you do not have a chip with a red side remaining
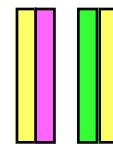
The color of the face of the chip on the left side of the stack is blue and you DO have a chip with a blue side remaining
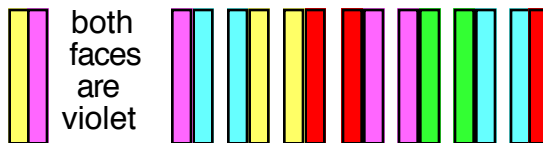
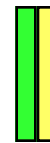**You add the violet / blue chip to the left end**

both faces are blue

and the 2 chips shown no the right remain

You add the yellow/ violet chip to the left end

both faces are violet

and the 1 chip shown no the right remains

You add the green/ yellow chip to the left end

both faces are yellow
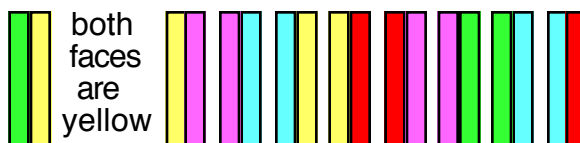
all 9 chip have been used and the faces on the ends of the stack are green and red

All 9 chips have been stacked and the ends are green / red
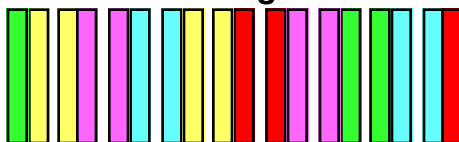
The colors on the ends of their stack must match the 2 colors on the chip you held out. Without seeing their stack you predict their ends are green / red

Case 2 (much less common)

The left and right sides of the stack are the same color and no remaining chip has a face that matches. No chip remaining will work on the right side or on the left side.

Start with the blue / yellow chip. At some point you will not be able to find a chip that matches the color showing on the right end. If you look at the left end you will also see that no chip the will match the face on the left end.

Example

You started with a yellow / violet chip. You added the next 6 chips as shown below.
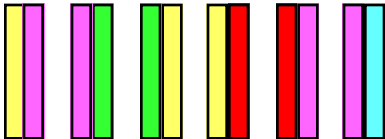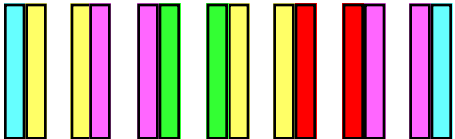
You have used the first 7 chips shown

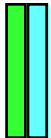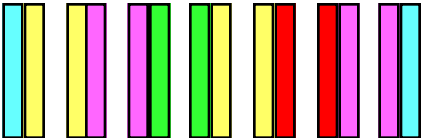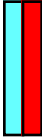**and the 2 chips shown to the right remain**

The color of the face of the chips on both ends of the stack is yellow and you do not have a chip with a yellow side remaining
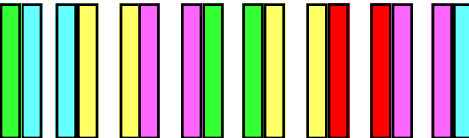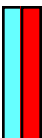
In the few cases when this happens the student will normally say they are stuck. Ask them if both ends are the same color. When they say yes, you must decide how you want to proceed.

One way to solve this logjam is to tell them to reshuffle the chips and start over with a different first chip.

The easiest way to handle this case is to tell them to move the chip on the right side of the stack to the left side and go on from there.

the chip from the right end moved to the left end

The stack now looks like this

You add the green / blue chip to the left end

both faces are blue

and the 1 chip shown to the right remains

both faces are blue

You add the blue / red chip to the right end

All 9 chips have been stacked and the ends are green / red

The colors on the ends of their stack must match the 2 colors on the chip you held out. Without seeing their stack you predict their ends are green / red

Now they trick works work

Its is all about pairs. There are an even number of each of the 20 colored faces.

4 yellow faces, **4 violet** faces, **4 blue** faces **4 green** faces and **4 red** faces

The chips represent a**ll the combinations of the 5 colors used 2 at a time**

Lets say I take out a **red / green** chip. There are 18 faces left.

4 yellow faces, **4 violet** faces, **4 blue** faces **3 green** faces and **3 red** faces

As you start the trick you pick any chip. After that you start pairing up the faces. There are an even number of yellow, violet and blue faces. As the stacking progresses you will pair up these colors and use them up. The even number of 4 means you will get 2 pairs of these faces. That is not true of the red and green faces.

There are only 3 red and green faces. The fact that 3 is an odd number means you can pair 2 of the red faces and 2 of the green faces but there will always be 1 red and 1 green left with out a partner. Where did the partners go? They went into your hand as the green / red chip.

Whatever chip you hold out creates 2 colors that will have an odd number of faces in the students stack of chips. They must finish up on the ends as all the pairs went on the inside of the stack in a face to face pairing. It is just that simple.

This example below shows the effect with fewer chips.

There are an even number of **2 blue** faces **2 green** faces and **2 yellow** faces at the start
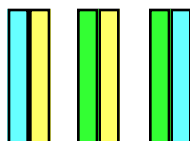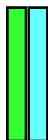
You hold out a   **The student has**   **They must pair up the yellow faces**
blue/ green chip.   **the other 2 chips**   **and leave the green and blue faces on the ends**
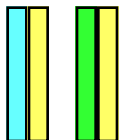
both faces are yellow
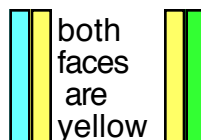
This example has 3 colors each used an even number of times (2). The trick we have has 5 colors used 4 times each.

There is one additional requirement for the chips used in this trick.

The 10 chips must contain **all the possible combinations of the 5 colors used 2 at a time.**
Each of the colors must be paired with the other 4 colors on opposites sides of the chips. The number of chips required to do this can be found using the formula for 5 items combined 2 at a time.

$$_5C_2 = 10$$

Making the chips

I bought a set of paper tags at Stables. They have metal rings around the edge to make them sturdy and the 2 faces are white paper. I selected 5 colored markers and used them to color the sides of the chips using the pattern below.

I decided to make my chips using yellow, red, blue, green, and violet.

Take one color (yellow) and put it on the face of 4 different chips.
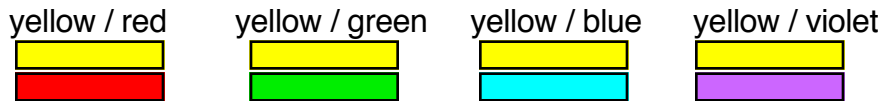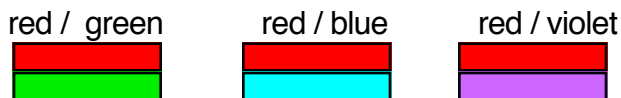Use the other 4 remaining colors on the back side of the 4 yellow chips. **red, green, blue and violet**

yellow / red	yellow / green	yellow / blue	yellow / violet

Take one of the remaining colors (red) and put it on the faces of 3 different chips. **red**

Use the other 3 remaining colors on the back side of the 3 red chips.   **green, blue, and violet**

red / green	red / blue	red / violet

Take one remaining color (green) and put it on the sides of 2 different chips.
Use the other 2 remaining colors on the back side of the 2 red chips. **blue, and violet**

green / blue	green/ violet

Take one of the remaining colors (violet) and put it on the sides of 1 chip.
Use the lest remaining color on the back side of the chips.

blue/ violet

The 10 chips I used for the explanations of this trick
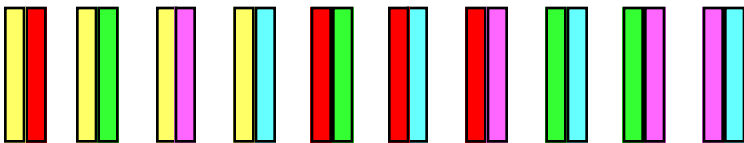
The staple tags are a good size to handle for most students. You cannot see the faces on the chips in the middle of the stack as the chips fit snugly together. At the end of the trick you can only see the 2 ends. These chips give the least amount of visual clues as to how the trick works.

A set of **poker chips** that come in 5 different colors works very well. You would glue the chips together following the pattern used above. The chips allow you to see the colors used in the middle of the stack.

The following set of 10 dominos work just like the colored chips.

The following set of 10 dominos works well for young students. They can lay them out flat on their desk and it is easy for them to look for matching faces when they can see all the faces at once.   It is also easy for you to hold out one of the dominos in your hand. Because all the faces are easy to see it is important that you do not face the student while they match the faces. You also must be sure to announce the outcome before you turn around.

Procedure:

Take one of the 10 dominoes without the student knowing it and note the 2 numbers on the faces. Tell the student that they have 9 dominators and put them on the desk face up.

Demonstrate the following procedures with them watching.
You take one of the 9 dominos and place it on the desk in a **horizontal** position. Select a second domino that has a number that matches a number on the **right face** of the first domino and place it **in a horizontal line** so the faces with the matching numbers are end to end. Select a third domino from the remaining ones that matches a number on the **left face** of the first domino and place it in **a horizontal line** so the faces with the matching numbers are end to end. Tell them that they can **add each new domino on the left end or the right end as long as the common faces have matching numbers.** Tell the student that are to continue this process until all nine dominoes have been used. Tell them when this has been completed they need to note what numbers are on the far **left end** and the far **right end** of the horizontal line of dominoes.

Have them do it:
After you are sure they know how it works shake up the 9 dominos and lay then out of the desk . Turn your back to them and tell them to be sure all the dominoes are face up. Tell them to pick any one of the 9 dominos and then continue the process they just practiced with you. Tell them to announce when they are done. Without turing around you state the numbers on the right and left ends of the line of dominos! Their number will be the 2 numbers on the domino in your hand

Do it again.
Most of the time the students will ask you to do it again. Take the nine dominoes in your hand along with the one already there. Shake them up and keep one in your hand when you put the other 9 on the desk. Turn around and perform the trick again.

There is a small chance that the process will hit a snag.
In a very few cases at one point in the process none of the remaining dominos will work on either end. When this happens the student will normally say they are stuck. In the few cases when this happens ask them if both ends of the horizontal line end with the same number.   When they say yes you must decide how you want to proceed.

One way to solve this logjam is to tell them to reshuffle the dominos and start over with a different first chip.

The easiest way to handle this case is to tell them to move the domino on the right side of the stack to the left side and go on from there.
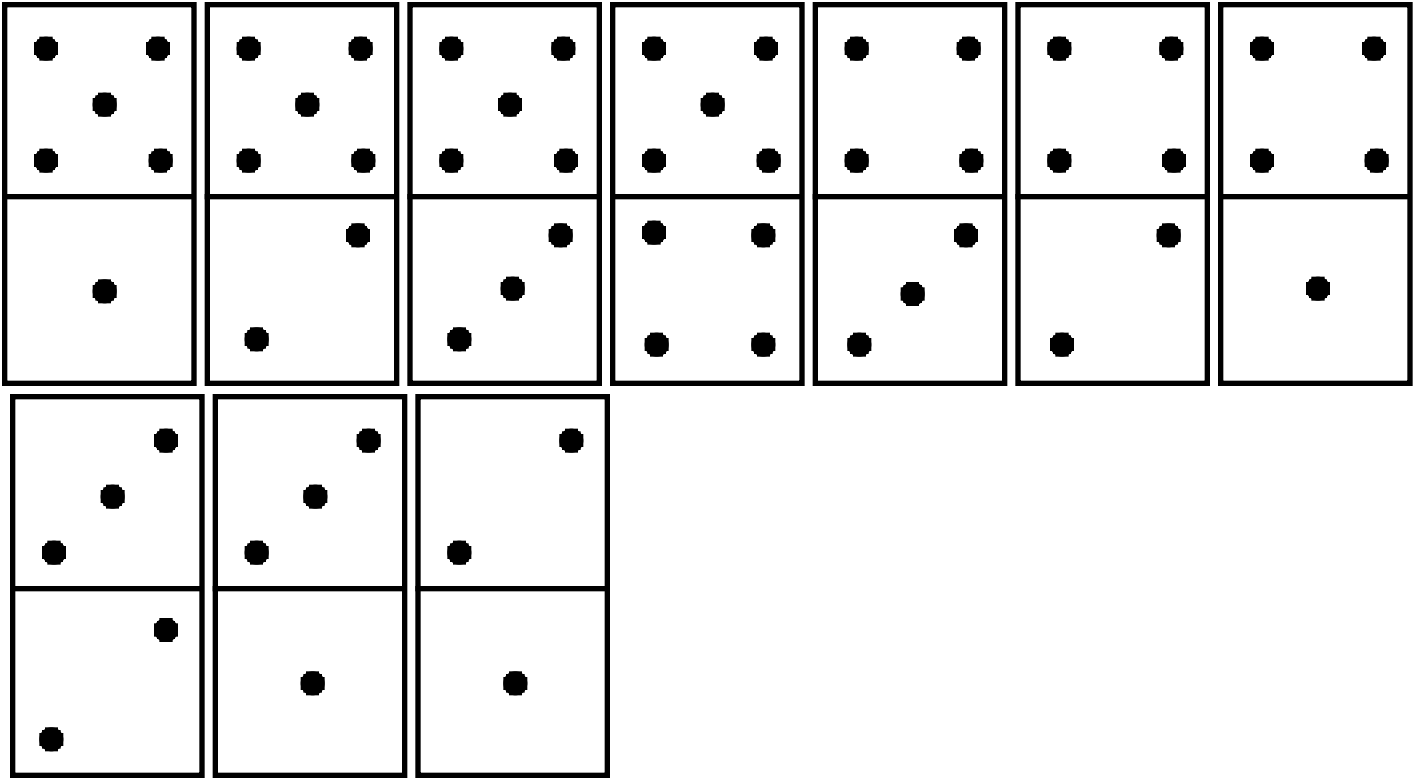
The ten dominoes needed for the trick
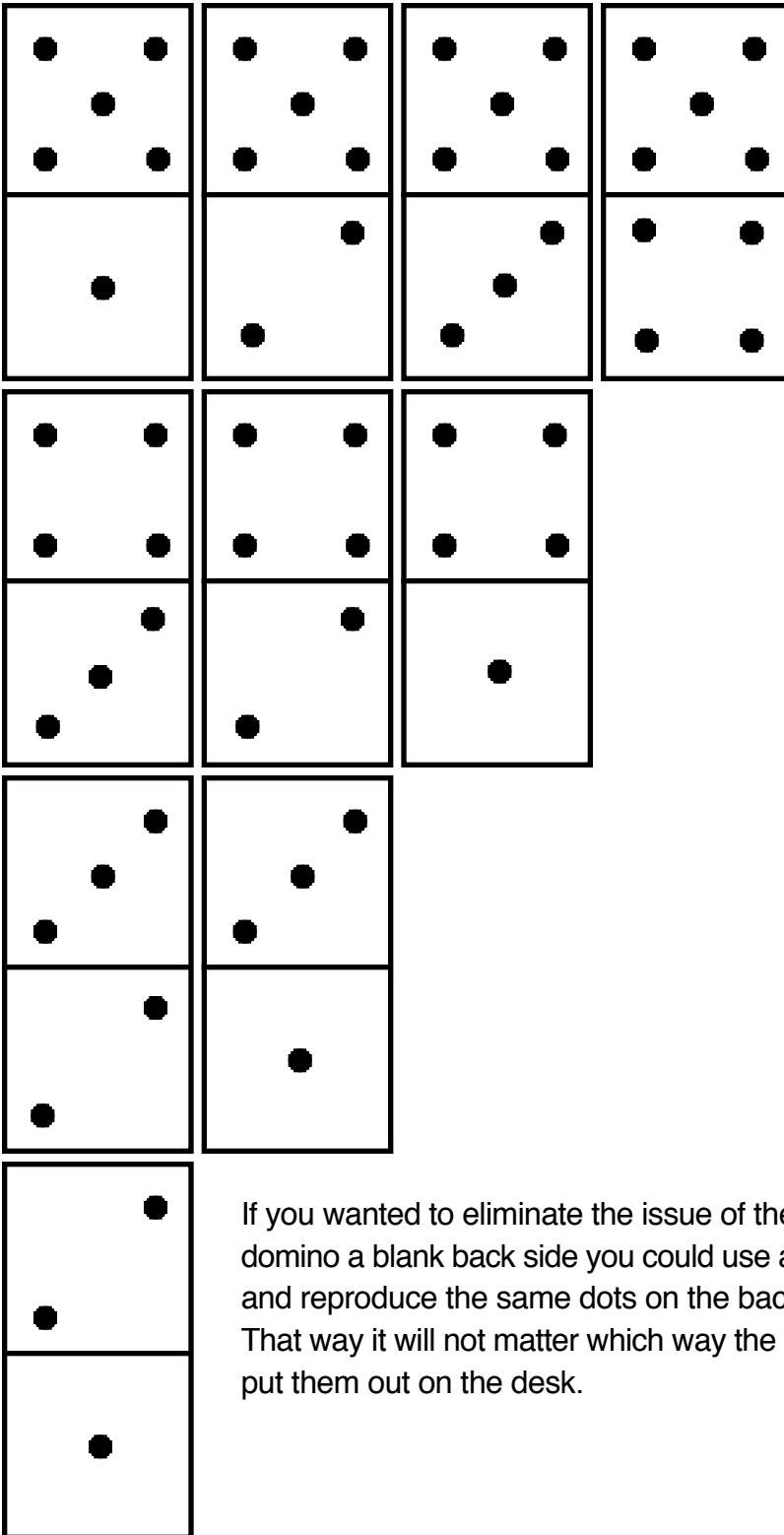
If you wanted to eliminate the issue of the dominos having each domino a blank back side you could use a black magic marker and reproduce the same dots on the back side of each domino. That way it will not matter which way the domino lands when you put them out on the desk.

The following 2 pages (pages 10 and 11) can be printed with a printer that supports back to back printing. This will produce a set of dominos that have the same faces bon both front and back.

The ten dominoes needed for the trick front

The ten dominoes needed for the trick back