RUBIK'S
TRIPLE CHALLENGE
SHELLS
THE 3-LEVEL PUZZLE OF NO RETURN!

SOLUTION HINTS BOOKLET

FROM BASIC TO CHALLENGING

Rubik's Shells is deceptively simple.

Four Wheels each contain pearls of a different colour. A few clicks can jumble them up. The puzzle is to put them back. There are trillions of combinations so solving the puzzle will be different every time.

Rubik's Shells is 3 puzzles in 1. The better you get, the harder you can make it. There are 3 levels:

- Basic
- Tough
- Challenge - Harder than the Cube!

Pushing a button takes you up a level - **BUT BE WARNED: ONCE PUSHED, THE BUTTONS STAY PUSHED. THERE IS NO GOING BACK!**

Rubik's Shells will challenge your ingenuity. When you feel ready, take the ultimate Challenge. Not even Rubik's Cube is as hard as the Shells.
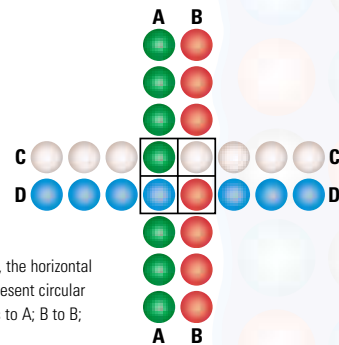
MEET YOUR SHELLS

Rubik's Shells has two interlocking pairs of Wheels.

Each Wheel has 8 pockets and, before any buttons have been pushed, they can be turned independently. At the intersection, 4 pockets are common to two Wheels, so there are 28 pockets altogether.

There is a coloured pearl in each pocket: 7 red; 7 green; 7 blue; and 7 white.

Note: In all diagrams, the horizontal and vertical lines represent circular Wheels. Thus, A joins to A; B to B; C to C; and D to D.

MEET YOUR SHELLS

> **WARNING**
>
> **Each pair of Wheels has a button on the hub.**
>
> **PUSHING A BUTTON LOCKS THAT PAIR OF WHEELS TOGETHER - PERMANENTLY. THERE IS NO GOING BACK - EVER!**
>
> **Pushing one button, takes you from Basic to Tough. Pushing the second button takes you from Tough to Challenge. So only push a button when you are ready for a higher level.**
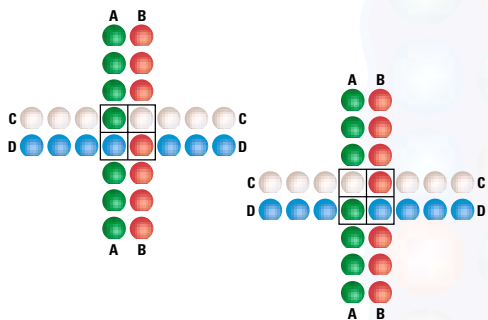
By clicking the Wheels back and forth, you can move the pearls around the Wheels and between the Wheels.

To solve the puzzle, you must return the pearls to their matching Wheels so each contains a single colour—except at **one** of the intersecting pockets.

MEET YOUR SHELLS

For example, both the positions shown here are solutions.

It doesn't matter what state the puzzle is in when you decide to push any buttons, the puzzle can always be solved.

Before pushing any buttons, jumble the pearls up and try solving the puzzle at the Basic level.

The next section contains some General Hints.

GENERAL HINTS

Play with the puzzle. Find a way of holding it that suits you so that you can click the Wheels easily.

On each level, work methodically. Feed the pearls into Wheels to form a continuous string of a colour. Remember, because the Wheels are circular, you can add to a string at either end.

The hard part is arranging the last few pearls at the intersection. For example, in the diagram, all the pearls are in position except for the four in the intersection.

The real puzzle is sorting them out.
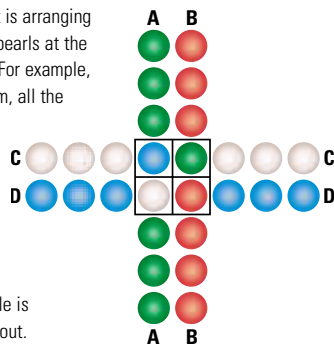
GENERAL HINTS

You should be able to solve the Basic level with a bit of time and thought. However, if you do have trouble, you will find solution hints on page 8.

If you are feeling bold, push a button and try the Tough level. This is harder but should not be beyond you after some practice. If you have trouble, you will find solution hints on page 11.

Finally, once you have mastered the Tough level, or are feeling particularly daring, push both buttons and try the ultimate Challenge. But remember, once you have pushed there is no going back.

Once you do this, you are on your own. The solutions for Challenge are so difficult that it would be impossible to detail them in this booklet. However, you will find some hints and sequences on page 22.

At first, on each level, try solving without the hints.

BASIC SOLUTION HINTS

Examine the puzzle to see which Wheel has the longest string of its colour. Start with that colour Wheel. Turn the Wheel so that the end pearl of the string is next to the intersection.

For example, in Diagram 1 there is a string of 3 green pearls in Wheel A (green). The arrow shows the end of the string that has been placed next to the intersection.

If there are any pearls of the same colour in the intersecting Wheel, turn it so one is added to the string in the first Wheel.

In our example, moving Wheel D three to the left adds a fourth green pearl, as in Diagram 2
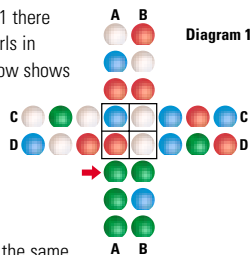
BASIC SOLUTION HINTS
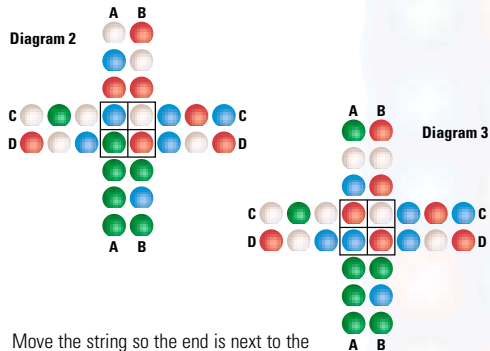
Move the string so the end is next to the intersection again, as in Diagram 3.

One at a time, move the other pearls of the required colour to the intersection. Transfer them to Wheel A to add to the string until a string of 6 has been made.

Repeat this for each Wheel in turn until you reach a position similar to that in Diagram 4.
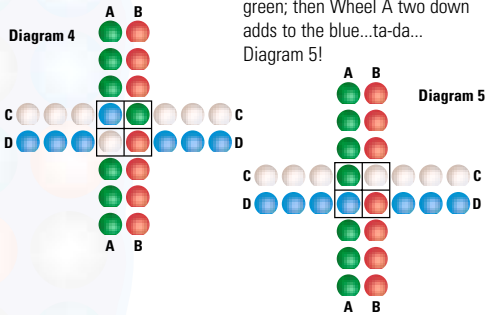
BASIC SOLUTION HINTS

Now, stop and think carefully; then just add to the strings in the simplest way.

In our example in Diagram 4, moving Wheel A one up adds to the white string; Wheel C one to the left adds to the green; then Wheel A two down adds to the blue...ta-da... Diagram 5!

Diagram 4

Diagram 5

Try solving it a few times. When you feel confident, push a button and go to the Tough level. BUT REMEMBER, ONCE PUSHED THERE IS NO GOING BACK. You'll find Solution Hints in the next section.
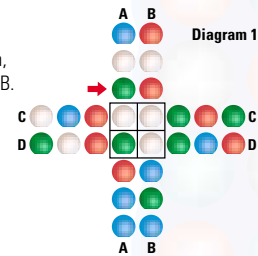
TOUGH SOLUTION HINTS

One pair of Wheels is now locked.

PHASE ONE

First, pearls must be shunted in pairs into the locked Wheel.

See if there is a pair of the required colours on the locked Wheel. If so, move them so they are next to the intersection. They will be the start of the string. If not, then you must form a pair as described in Step One on the following pages.

For example, in Diagram 1, Wheels AB (green/red) are locked. Above the intersection, there is green in A and red in B. This is the start of the string.
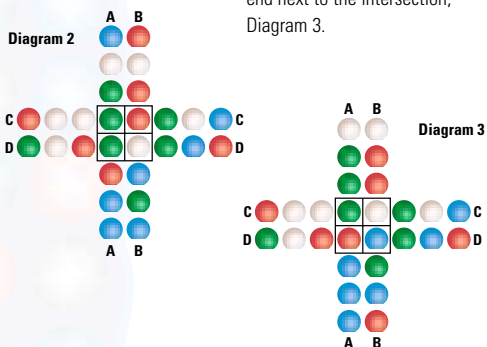
Now, just add to the string of pearls.

Diagram 1

TOUGH SOLUTION HINTS

In our example, Diagram 1, the green-red pair in Wheel C can be moved two to the left, as in Diagram 2. Then Wheel AB can be moved up to add to the string and to keep the end next to the intersection, Diagram 3.

Diagram 2

Diagram 3

Since you can only see one horizontal Wheel at any one time (Wheel C in the diagrams), it is best to use this Wheel to add to the string.
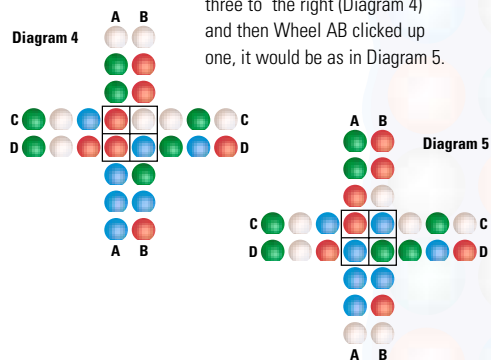
TOUGH SOLUTION HINTS

Generally, to add to the string, follow these steps:

Step One: Add a pearl of the colour for Wheel B to the end of the string in Wheel A.
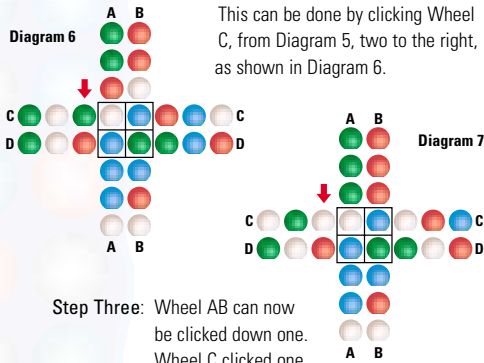
In our example, this would mean adding a red to the greens in Wheel A. In Diagram 3, if Wheel C is clicked three to the right (Diagram 4) and then Wheel AB clicked up one, it would be as in Diagram 5.

Diagram 4

Diagram 5

TOUGH SOLUTION HINTS

Step Two: A pearl for the colour in Wheel A must now be moved to the arrowed position in Diagram 6.

In our example, a green is needed. This can be done by clicking Wheel C, from Diagram 5, two to the right, as shown in Diagram 6.

Diagram 6

Diagram 7

Step Three: Wheel AB can now be clicked down one. Wheel C clicked one to the right, and Wheel AB clicked back up one to add to the string (Diagram 7).

14

TOUGH SOLUTION HINTS

Keep adding to the string in the locked Wheels in this way. You can add to either end of the string, so you may sometimes find it easier to turn the puzzle over depending on the position of the pearls you want to move.
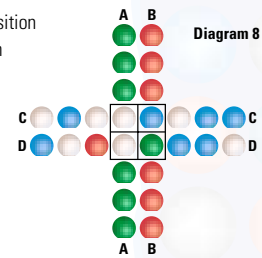
Once you have made a string of 6 pairs, you will be in a position something like the one shown in Diagram 8.

Now it is time for Phase Two.

Diagram 8

PHASE TWO

Pearls can now be shuttled between Wheels C and D in pairs.

In our example, Diagram 8, Wheel C is white and Wheel D is blue.

15

TOUGH SOLUTION HINTS

Step One: Move Wheel C so the pearls you wish to transfer to Wheel D are in the intersection. In our example, clicking Wheel C three to the left from Diagram 8 puts two blues in the intersection, Diagram 9.

Diagram 9
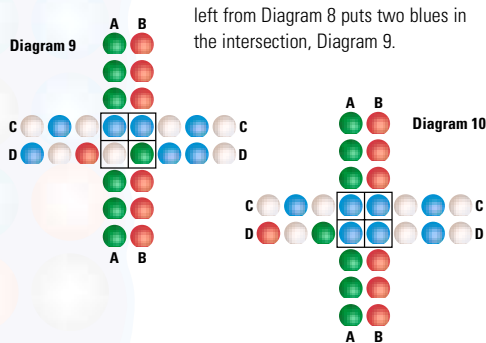
Diagram 10

Step Two: Move Wheel D so that the pearls you wish to keep in Wheel D are in the intersection. In our example, clicking Wheel D two to the left puts two blue pearls in the intersection (Diagram 10).

16

TOUGH SOLUTION HINTS

Step Three: Click Wheel AB down one. In our example, this would produce the position in Diagram 11.
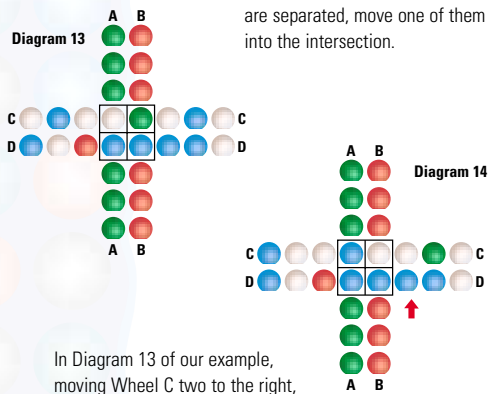
Diagram 11
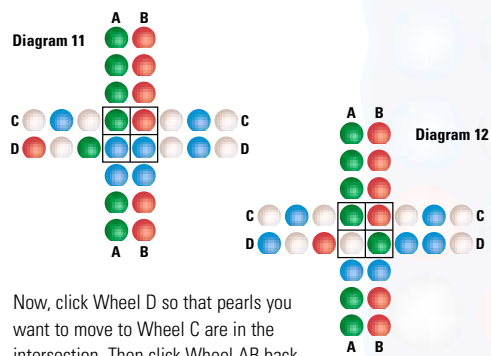
Diagram 12

Now, click Wheel D so that pearls you want to move to Wheel C are in the intersection. Then click Wheel AB back up one.

In our example, clicking Wheel C two to the right puts a white and green pearl in the intersection (Diagram 12).

17

TOUGH SOLUTION HINTS

A click up of Wheel AB then produces the position in Diagram 13.

If the pearls you wish to transfer are separated, move one of them into the intersection.

Diagram 13

Diagram 14

In Diagram 13 of our example, moving Wheel C two to the right, puts a blue in the intersection, as shown in Diagram 14.

TOUGH SOLUTION HINTS

Move Wheel D so a pearl of the colour for Wheel C is by the intersection. It must be on the same side as the pearl of that colour in the intersection in Wheel C.

In our example, this is the arrowed position in Diagram 14.

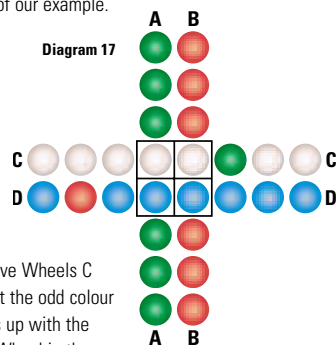Moving Wheel D two to the left, as in Diagram 15, puts a white pearl there.

Diagram 15
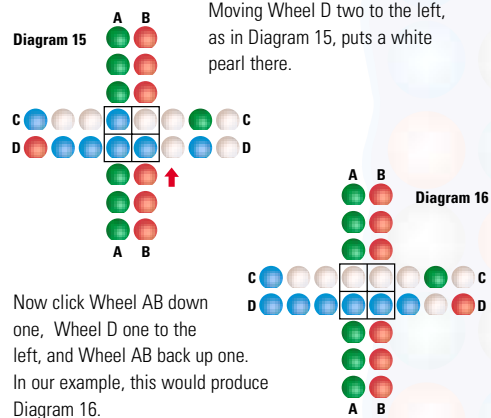
Diagram 16

Now click Wheel AB down one, Wheel D one to the left, and Wheel AB back up one. In our example, this would produce Diagram 16.

TOUGH SOLUTION HINTS

Continue transferring the pearls. Don't forget, you will need one of the colours from Wheels AB in each of the Wheels C and D. It doesn't matter which.

Finally, when you have transferred all the relevant pearls, you will reach a position similar to the one shown in Diagram 17 of our example.
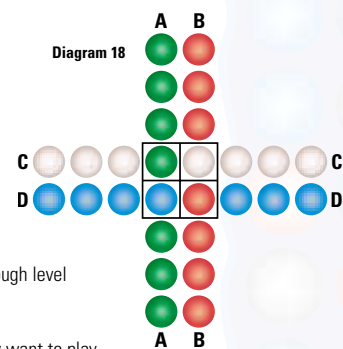

Diagram 17

Now just move Wheels C and D so that the odd colour in them lines up with the appropriate Wheel in the locked pair of Wheels AB.

TOUGH SOLUTION HINTS

In our example in Diagram 17, this would mean moving Wheel C two to the left, and Wheel D, three to the right to solve the Tough level, as shown in Diagram 18.

Diagram 18

Practice on the Tough level for a bit.

Then, if you really want to play hardball, push the other button and try the Challenge. But remember, once pushed there is no going back. There are hints in the next section.

CHALLENGE HINTS

This level is very difficult. You will find some of the hints in the Tough section also apply here.

Work methodically and shuttle strings into the locked Wheels, one pair at a time.

In the final stage, you will find that you will need to develop some sequences that shuttle the pearls around the intersection without disturbing those already placed.

The options are simple: you can only move one Wheel and then the other. So think about what you can do. Noting moves on a piece of paper helps.

Try to discover some sequences of your own, and note what they do.

If you have a problem, there are some helpful sequences and manoeuvres in the next section.

CHALLENGE SEQUENCES

In all sequences, the Shell is held so that the vertical Wheel is furthest from you and the horizontal Wheel is nearest.

Moves in the sequence are indicated by arrows. A horizontal arrow indicates the horizontal Wheel is clicked; a vertical arrow means the vertical Wheel is clicked, as follows:

← Click pearls in intersection one to the left;

→ Click pearls in intersection one to the right.

↑ Click pearls in intersection up one;

↓ Click pearls in intersection down one.

Note: In some sequences, the diagrams only show the pearls in the intersection and colours have not been shown to avoid confusion - the pearls are numbered to show the movement; and A, B, C, and D used to represent the colours in the Wheel corresponding to that letter.
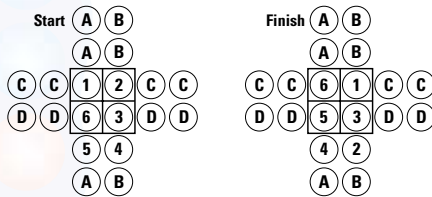
CHALLENGE SEQUENCES

Dosi-Do to the Right About 3
Circles the numbered pearls clockwise skipping 3:

↓→↑←; ↓→↑←; ↑→↓←; ↑→↓←; ↑→↓←;
↓→↑←; ↓→↑←; ↑→↓←; ↑→↓←; ↑→↓←.

Start (A)(B)   Finish (A)(B)

Dosi-Do to the Left About 3
This reverses the above sequence and will go from the Finish position back to the Start:

→↑←↓; →↑←↓; →↑←↓; →↓←↑; →↓←↑;
→↑←↓; →↑←↓; →↑←↓; →↓←↑; →↓←↑.

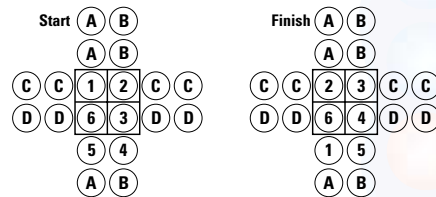(Note: 4 dosi-dos of one kind will be the same as 1 of its reverse.)

CHALLENGE SEQUENCES

Dosi-Do to the Left About 6
Circles the numbered pearls counter-clockwise skipping 6:

↓←↑→; ↓←↑→; ↑←↓→; ↑←↓→; ↑←↓→;
↓←↑→; ↓←↑→; ↑←↓→; ↑←↓→; ↑←↓→.

Start (A)(B)   Finish (A)(B)

Dosi-Do to the Right About 6
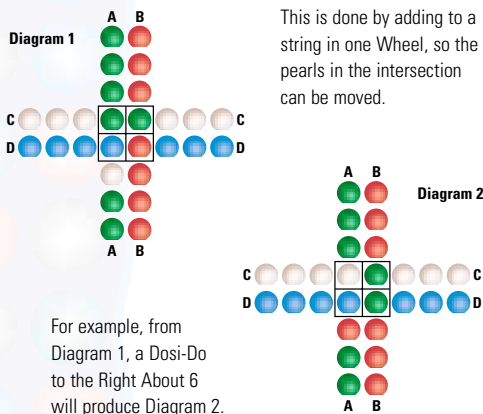This reverses the above sequence and will go from the Finish position back to the Start:

←↑→↓; ←↑→↓; ←↑→↓; ←↓→↑; ←↓→↑;
←↑→↓; ←↑→↓; ←↑→↓; ←↓→↑; ←↓→↑.

CHALLENGE SEQUENCES

Paradigm Shifts

A Paradigm Shift is not exactly a sequence. It is a manoeuvre that switches the last 6 pearls to be sorted into a different framework.
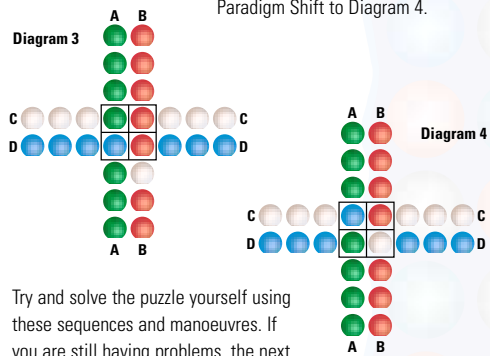

Diagram 1

This is done by adding to a string in one Wheel, so the pearls in the intersection can be moved.

Diagram 2

For example, from Diagram 1, a Dosi-Do to the Right About 6 will produce Diagram 2.

CHALLENGE SEQUENCES

Clicking Wheel CD one to the left now apparently 'swaps' the two greens in Wheel B with the white and blue in Wheel A. This is a Paradigm Shift.

Similarly, a Dosi-Do to the Left About 6 from Diagram 1 produces Diagram 3. Wheel AB is then moved up one for a Paradigm Shift to Diagram 4.

Diagram 3

Diagram 4

Try and solve the puzzle yourself using these sequences and manoeuvres. If you are still having problems, the next section gives some final hints.

CHALLENGE FINAL HINTS

Work methodically. Build up a string in one Wheel in a similar manner to that described in Steps 1-3 of Phase One for the Tough level. Once you have built a string of 5 pairs in one Wheel, do the same in the other Wheel.
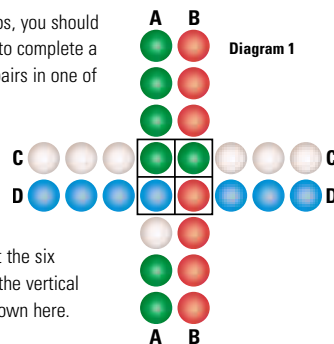
Using Dosi-dos, you should then be able to complete a string of six pairs in one of the Wheels.

Diagram 1

This leaves six pearls to sort out. Turn the puzzle so that the six pearls are in the vertical Wheel, as shown here.

Stop and think.

Note the position of the 6 pearls on some paper.

CHALLENGE FINAL HINTS

Try to work out if a combination of Dosi-Dos will solve the puzzle. If you find this too hard, try some Dosi-Dos at random – you may get lucky.

If you cannot see any way of transforming the position into a solution, look for a Paradigm Shift.

Note that after a Paradigm Shift such as that shown in Diagram 4 on page 27, the puzzle can be turned upside down or switched so the horizontal Wheel becomes the vertical.

From any Paradigm Shift, there are new universes to explore. So study the new position and see if Dosi-dos will solve it.

The numerous end positions can all be solved with Dosi-dos and sometimes a Paradigm Shift.
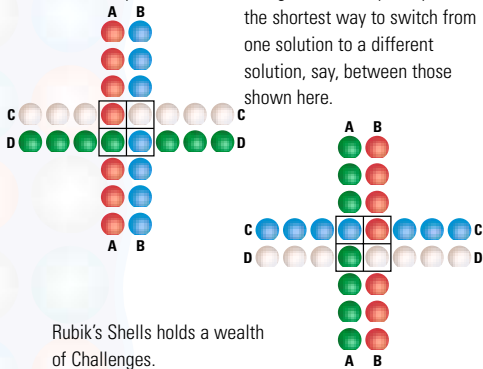
Now try taking on the Challenge.

ADDITIONAL CHALLENGES

Each time you solve Rubik's Shells, the end position is likely to be different. So, try solving it as many times as you can - each will be a new Challenge. The puzzle can also be solved for any set of colour pearls in any colour reel. So try solving the puzzle that way.

Then, set yourself new Challenges. For example, try to find the shortest way to switch from one solution to a different solution, say, between those shown here.

Rubik's Shells holds a wealth of Challenges.

Rubik's Classic Puzzle Challenges!

Rubik's Cube
The Ultimate
Brain Teaser!

Rubik's
Transformable Snake
The Twisting
Puzzle of Shapes!

Rubik's Magic
The Amazing
Folding Puzzle!

Rubik's Challenges for Two!

Rubik's Clubpion
Win at Love
in Only 6 Moves!

Rubik's Infinity
Move One Ball
to Change it All!

Portable Puzzle Challenges with a Rubik's Twist!

Rubik's Cube
Key Ring
All the Play of
the Original Cube!

Rubik's Mini Cube
The Surprisingly
BIG Challenge!

Rubik's Snake
Key Ring
The MINI Twisting
Puzzle of Shapes!

Rubik's Rings
The Challenge of the
Interlocking Rings!