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PAPER CUT METHOD

This tessellation lesson is easy and foolproof.

This particular tessellation tutorial is also a landmark: our first tessellation lesson sent to us by a guest artist, years ago. It came to us from 15-year-old **Guest Artist Rachael G***. We salute Rachael's effort and desire to help others.

You can also see this [tessellation lesson adapted for Microsoft Windows' "Paint" program and any digital painting program.](#)

Art and Math teacher **Jan Miller** has this to add, based on using Rachael's tutorial in her classroom:

"The tessellation method from your site which I tried to use with my 3rd graders was **Rachel's 'Papercut Method'** but I had a lot of trouble getting it to work. I finally added some little refinements which make it work nearly every time. Step #1 and #3 are to get the tessera to tessellate. Step #2 is to help kids cut accurately. Here are those modifications:

1. Before cutting out the drawn lines we write **NW** in the northwest corner, **SW** in the southwest corner, **NE** in the northeast corner and **SE** in the southeast corner.

Note from the webmaster: It may make more sense to you if you label the outside corners **PART**. In step 3, rearrange the **PARTS** with the letters at the **CENTER**, so they spell **TRAP**.

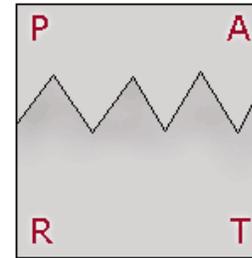
Here are some other word combinations that work: **PETS/STEP**, **POTS/STOP**, **EVIL/LIVE** or **FLOG/GOLF**, **BRAG/GARB** or **TRAM/MART**, **TIME/EMIT**, **PANS/SNAP**, or **RATS/STAR**.

PA	TR	PE	ST	PO	ST	LI	EV	FL	GO
RT	AP	TS	EP	TS	OP	VE	IL	OG	LF
BR	GA	TR	MA	TI	EM	PA	SN	RA	ST
AG	RB	AM	RT	ME	IT	NS	AP	TS	AR

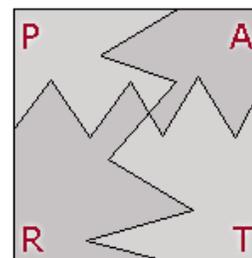
2. Start cutting either line and cut to just past the point where it intersects the other line and stop. Then cut out the entire



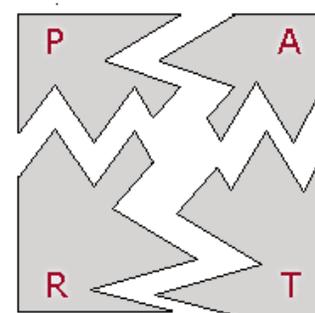
1. Write "PART" in the corners like this.



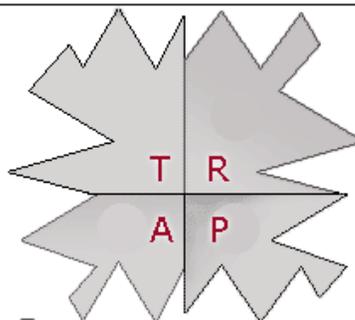
2. Draw a random line on the paper left-to-right.



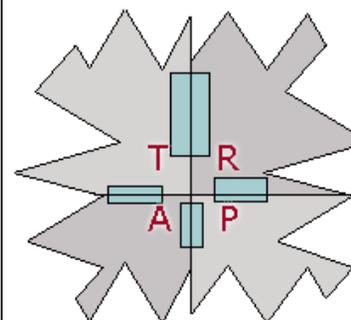
3. Draw a second random line on the paper top-to-bottom.



4. Cut out your shapes on the lines you drew.



5. Put the pieces together so corners are in the middle and they spell "TRAP" like this.



6. Tape the pieces together.

second line. Now when the kids go back to finish the first line (starting exactly where they left off) we know they will get an accurate cut.

3. Lay the pieces out on the table just as they were before cutting, except leave a little gap in between. Now swap the **NE** with the **SW** corners and swap the **NW** and **SE** pair.

This seems to work nearly every time. The kids really enjoy knowing that someone closer to their own age invented this method."

See how [4th grade art teacher Karen Weber's class made their own tessellations](#) with this lesson. [Her class's do-it-yourself tessellation art gallery](#) shows the final tessellation art AND the handmade patterns that the kids made while producing the art.

***UPDATE: July, 2011.**

A professional tessellation artist, David Bailey, has pointed out that someone wrote about this method before Rachael was even born. Perhaps Rachael reinvented it, unaware that someone else had thought along the same lines earlier, or perhaps Rachael simply rewrote **Bruce Robertson's** technique using her own words and artwork. Either way, it's worth noting that in the years since we first posted Rachael's tessellation tutorial, "Papercut Method" has grown to be Tessellation.org's most popular tutorial and one of our most visited pages.

For those of you interested in looking at that earlier make-it-yourself tessellation lesson, you can find it on page 179 in the book **"Learn to Draw Step-By-Step"** by Bruce Robertson. The book was published in 1986 by **Macdonald** publishing house. It's 192 pages, a little less than 30cm x 30cm, and weighs about 0.75 kilograms. Its ISBN-10 number is 0356107892, and its ISBN-13 listing is 978-0356107899. As of 2010, the book is out of print but **many used copies are available on Amazon.com** for about US\$2 plus shipping. I'm buying a copy now; I'll see page 179 when it reaches me in a few months' time.

