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Homework 1: Pattern

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**Name:**

Do not burn up the clutch

**Context:**

If you are an experienced driver or a new driver, driving a new car with a manual transmission can be challenging. There are more pedals and levers that have to be operated and the proper understanding of the gears. The worst part is that without proper knowledge, a person can damage the clutch and cause the vehicle to be inoperable.

**Problem:**

The problem is when learning to drive manual transmission, one must learn to drive a car with three pedals instead of two and adjust to the variations of each vehicles gear system so that the clutch does not burn up.

**Forces:**

There are many forces when driving a vehicle. For this pattern we are focusing on the ones that get the vehicle in motion.

* One force is the setup of the gearing system. Some vehicle have the reverse gear in the lower right position while others have it in the far left and up position. See the diagrams below. Depending on the desired movement of the car it important to know where the correct gear is. One cannot simply select a gear and push the gas to get the car moving.
* Knowing that there are different clutch pressures is another force. Clutches can be engaged by a cable or by hydraulics. Some clutches require more force on the pedal to engage them while others are lighter. Being sensitive to the force required is necessary for proper operation
* The distance the clutch pedal needs to be pushed is probably the toughest force to learn. As the clutch system gets older, typically the distance the clutch pedal needs to be pushed gets smaller.
* Another force is the sensitivity of the accelerator pedal. Because the accelerator needs to be pushed in while the clutch is being let out. Too much fuel or not enough fuel will cause the vehicle to stall or, cause the clutch to burn up. Stalling the car with too little fuel is much less damaging than too much fuel causing the clutch to burn up.
* The angle of the road will also play into how much fuel is needed to get the vehicle moving. Obviously starting out going uphill is going to require more fuel, than starting out going downhill.

The obvious idea to getting the vehicle in motion is to put it in gear and push the accelerator, but in the case of a manual transmission that will not work. One must learn to operate the clutch, gears, and accelerating in an effective and fluid motion.

**Solution:**

The solution for driving a vehicle with a manual transmission would be to first make sure that the vehicle is in the proper gear. If you try and start out in too high of a gear, meaning gear two through five, the clutch is more likely to burn up. Secondly, and this is the trick, is to let the clutch out very slowly, as far as you can without having to push on the accelerator. Most vehicles will begin to move very slowly on their own without even needing a push on the accelerator. That is how a driver will know the gears on engaged and will be less likely to push too hard on the accelerator and burn up the clutch. If the car does not move on its own because of a hill, the driver will need to listen to the engine to the sound the car makes when it needs more fuel. As the car beings to move, or needs more fuel, then the driver should begin to push on the accelerator. Too often the driver wants to push the accelerator to make the car move when in fact the best solution is the other way around.

**Sketch:**

Standard 5 speed car European 6 Speed European 5 Speed

1 3 5 R 1 3 5 R 1 3 5

2 4 R 2 4 6 2 3

**Resulting Context:**

The result will be solid method for getting the vehicle to move in the desired direction in a fluid and effective motion.