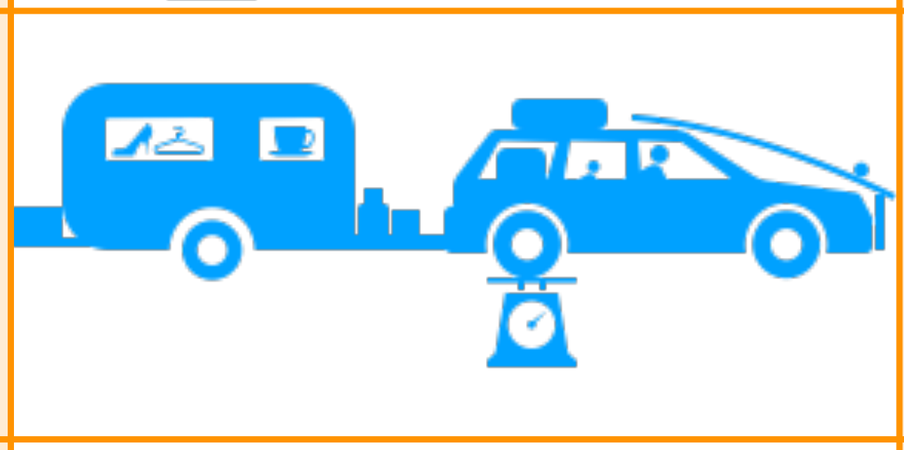
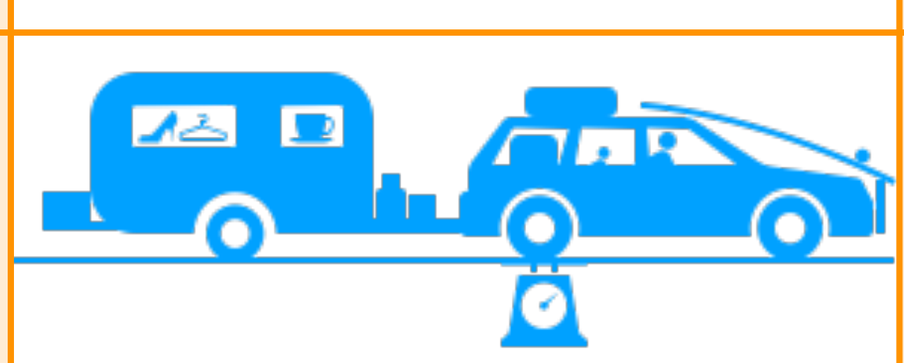
Car and Trailer Loads Explained

TERM	ACRONYM		DEFINITION	WHAT THAT MEANS
Gross Vehicle Mass	**GVM**		*The maximum loaded mass of a motor vehicle.	Everything that you put in or on the car (by itself) adds to the total weight of the car. Your car's GVM should be stated in your car's manual (in the glovebox?).
Tare Mass			The tare weight of the trailer is its empty weight.	This is essentially the weight of the empty van with empty water tanks, empty waste water tanks and empty gas bottles. This is 'bare bones' stuff.
Aggregate Trailer Mass	**ATM**		*The total mass of the trailer when carrying the maximum load recommended by the manufacturer. This will include any mass imposed onto the towing vehicle.	Everything that you fill (eg gas and water) and everything you put into or on the trailer goes to make up the ATM. Your trailer's ATM will be stamped on the compliance place and ought not be exceeded.
Ball Weight			This is the load from the trailer onto the tow-bar of the motor vehicle.	This can be hard to measure without Ball Weight scales. But can be calculated by subtracting the trailer's GTM from its ATM. Generally, the optimal ball weight of the trailer is around 10% of the trailer's ATM. The trailer's axle location and the placement of heavy weights in/on the trailer will play a bit part here.
Gross Trailer Mass	**GTM**		*This is the maximum loaded mass transmitted to the ground by the axle, or axles, of the trailer when coupled to a towing vehicle.	The weight on the trailer's axle will be less that the ATM of the trailer - due to the weight on the ball.
Rear Axle Load of the Towing Vehicle			This is the load on the rear axle of the towing vehicle. The load of the car itself as well, as the stuff packed in it (people and things), plus the load of the trailer on the tow-ball.	Now that everything is coming together, the cumulative effect of all that stuff needs to be understood - as well as the leverages on the tow ball and the rear axle. The car's wheelbase and overhang of the tow-bar also plays a big part. Your car's compliance plate or user manual will tell you the maximum axle loads.
Front Axle Load of the Towing Vehicle			This is the load on the front axle of the towing vehicle. The load of the car itself as well, as the stuff packed in it (people and things). The load from the trailer plus the load of the trailer on the tow-ball.	As everything comes together around the tow ball and the rear axle of the car, these loads will have a leverage effect with the rear axle as the pivot. Loads placed on the rear axle will have the effect of reducing loads on the front axle - which, may have an effect on steering and handling.
Gross Combination Mas	**GCM**		*In relation to a motor vehicle (towing vehicle), this is the maximum loaded mass of the motor vehicle and of any vehicles or trailers being towed by that motor vehicle.	This is where your 2500kg car that you drive around town and do the school runs in, is no longer the same car - it can become a 6000kg vehicle with all the stopping distances and handling that goes with that. This needs careful consideration.

***Vehicle Standards Fact Sheet by the Government of South Australia**

Provided as an information sheet only. Readers should check with their State's legislative requirements and tow vehicle / trailer user manuals and compliance documents. Compiled by *Out&About with Dayv* - www.campandtravel.com.au - November 2021